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FRA-2000-7257-35

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00 JUN 15 2000 9:11

**Meeting of the Railroad Safety Advisory Committee  
May 19, 2000**

*The Madison Hotel, 1177-15th Street, NW, Washington, DC*

***Agenda***

9:30 am Meeting Convened *George A. Gavalla, Chairperson*

Opening Remarks

RSAC Rechartering - Diversity

**10:30-10:45 BREAK**

10:45 RSAC Website *Masoud Deljoubar, Mori Associate,*

Working Group Activity - *Grady Cothen*  
Status Report

Sanitation *Christine Beyer*

**12:00 - 1:00 LUNCH**

Training and Qualification of *George Gavalla*  
Safety-Critical Personnel

SACP Update

PTC - Standards *William Goodman/David Matsuda*

**2:30-2:45 BREAK**

2:45 Remote Control Locomotive *Joe Gallant*  
Technical Conference

Recap and General Discussion *George Gavalla*  
Planning-Scheduling-Administrative

**3:30 ADJOURN**

# Railroad Safety Advisory Committee Meeting (RSAC)

*Federal Railroad Administration*



May 19, 2000  
The Madison Hotel  
Washington, DC

standards, e.g., weight, size and ergonomic considerations; (2) employee training, e.g., hands-on training considerations; (3) operating practices and procedures, including but not limited to standard operating procedures, safety rule modifications, and railroad operating plans; (4) test and inspection procedures, including but not limited to electric and magnetic field emissions; (5) security and reporting issues, including but not limited to recordkeeping and notification to FRA concerning all RCL accidents and incidents. FRA requests that interested parties share their views regarding the use of consistent and safe RCL operations. FRA encourages comments on all aspects of RCL use. A transcript of the technical conference will be taken and placed in the public docket of this proceeding.

#### Public Participation Procedures

Any person wishing to participate in the technical conference should notify the FRA Docket Clerk by mail or by e-mail by close of business on July 12, 2000. The notification of intent to participate should identify the organization, the person represents (if any), the names of all participants from that organization planning to participate, and a phone number at which the registrant can be reached. FRA reserves the right to limit active conference participation to those persons who have registered in advance.

(Authority: 49 U.S.C. 103, 20103-04, 20106-08, 20135 and 20701-03)

Issued in Washington, DC on May 9, 2000.  
George Gavalla,

Associate Administrator for Safety.

[FR Doc. 00-12110 Filed 5-12-00; 8:45 am]

BILLING CODE 4910-06-P

## DEPARTMENT OF TRANSPORTATION

### Federal Railroad Administration

[Docket No. **RSAC-96-1**, Notice No. **20**]

#### Railroad Safety Advisory Committee ("RSAC"); Working Group Activity Update

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Announcement of Railroad Safety Advisory Committee (RSAC) Working Group Activities.

SUMMARY: FRA is updating its announcement of RSAC's working group activities to reflect the current status of working group activities.

#### FOR FURTHER INFORMATION CONTACT:

Trish Paoella, RSAC Coordinator, FRA, 1120 Vermont Ave, N.W., Mailstop 25, Washington, D.C. 20590, (202) 493-6212 or Grady Cothen, Deputy Associate Administrator for Safety Standards Program Development, FRA, 1120 Vermont Ave, N.W., Mailstop 25, Washington, D.C. 20590, (202) 493-6302.

SUPPLEMENTARY INFORMATION: This notice serves to update FRA's last announcement of working group activities and status reports on December 17, 1999 (64 FR 70756). The thirteenth full Committee meeting was held January 28, 2000. The next meeting of the full Committee is scheduled for May 19, 2000 at the Madison Hotel in Washington, D.C.

Since its first meeting in April of 1996, the RSAC has accepted sixteen tasks. Status for each of the tasks is provided below:

**Task 96-1—Revising the Freight Power Brake Regulations.** This Task was formally withdrawn from the RSAC on June 24, 1997. FRA published an NPRM on September 9, 1998, reflective of what FRA had learned through the collaborative process. Two public hearings were conducted and a technical conference was held. The date for submission of written comments was extended to March 1, 1999. FRA is preparing a final rule. Contact: Thomas Hermann (202) 493-6036.

**Task 96-2—Reviewing and recommending revisions to the Track Safety Standards (49 CFR Part 213).** This task was accepted April 2, 1996, and a Working Group was established. Consensus was reached on recommended revisions and an NPRM incorporating these recommendations was published in the **Federal Register** on July 3, 1997, (62 FR 36138). The final rule was published in the **Federal Register** on June 22, 1998 (63 FR 33991). The effective date of the rule was September 21, 1998. A task force was established to address Gage Restraint Measurement System (GRMS) technology applicability to the Track Safety Standards. A GRMS amendment to the Track Safety Standards is being prepared for presentation to the RSAC. Contact: Al MacDowell (202) 493-6236.

**Task 96-3—Reviewing and recommending revisions to the Radio Standards and Procedures (49 CFR Part 220).** This Task was accepted on April 2, 1996, and a Working Group was established. Consensus was reached on recommended revisions and an NPRM incorporating these recommendations was published in the **Federal Register** on June 26, 1997 (62 FR 34544). The

final rule was published on September 4, 1998 (63 FR 47182), and was effective on January 2, 1999. Contact: Gene Cox (202) 493-6319.

**Task 96-4—Reviewing the appropriateness of the agency's current policy regarding the applicability of existing and proposed regulations to tourist, excursion, scenic, and historic railroads.** This Task was accepted on April 2, 1996, and a Working Group was established. The Working Group monitored the steam locomotive regulations task. Contact: Grady Cothen (202) 493-6302.

**Task 96-5—Reviewing and recommending revisions to Steam Locomotive Inspection Standards (49 CFR Part 230).** This Task was assigned to the Tourist and Historic Working Group on July 24, 1996. Consensus was reached and an NPRM was published on September 25, 1998 (63 FR 51404). A public hearing was held on February 4, 1999, and recommendations were developed in response to comments received. The final rule was published on November 17, 1999 (64 FR 62828). Contact: George Scerbo (202) 493-6349.

**Task 96-6—Reviewing and recommending revisions to miscellaneous aspects of the regulations addressing Locomotive Engineer Certification (49 CFR Part 240).** This Task was accepted on October 31, 1996, and a Working Group was established. Consensus was reached and an NPRM was published on September 22, 1998. The Working Group met to resolve issues presented in public comments. The RSAC recommended issuance of a final rule with the Working Group modifications. The final rule was published November 8, 1999 (64 FR 60966). Contact: John Conklir (202) 493-6318.

**Task 96-7—Developing On Track Equipment Safety Standards.** This task was assigned to the existing Track Standards Working Group on October 31, 1996, and a Task Force was established. The Task Force is finalizing a proposed rule to present to the RSAC for consideration. Contact: Al MacDowell (202) 493-6236.

**Task 96-8—This Planning Task evaluated the need for action responsive to recommendations contained in a report to Congress entitled, Locomotive Crashworthiness & Working Conditions.** This Planning Task was accepted on October 31, 1996. A Planning Group was formed and reviewed the report, grouping issues into categories.

**Task 97-1—Developing crashworthiness specifications to promote the integrity of the locomotive cab in accidents resulting from collisions.** This Task was accepted on

June 24, 1997. A Task Force on engineering issues was established by the Working Group on Locomotive Crashworthiness to review collision history and design options and additional research was commissioned. The Working Group reviewed results of the research and is drafting standards for freight and passenger locomotives to present to the RSAC for consideration. Contact: Sean Mehrvazi (202) 493-6237.

**Task 97-2—Evaluating the extent to which environmental, sanitary, and other working conditions in locomotive cabs affect the crew's health and the safe operation of locomotives, proposing standards where appropriate.** This Task was accepted June 24, 1997. A draft sanitation NPRM is under review by the Working Group on Cab Working Conditions. Task forces on noise and temperature were formed to identify and address issues. The Noise Task Force is preparing draft recommendations for noise exposure requirements. Contact: Brenda Hattery (202) 493-6326.

**Task 97-3—Developing event recorder data survivability standards.** This Task was accepted on June 24, 1997. An Event Recorder Working Group and Task Force have been established and are actively meeting. A draft proposed rule is being reviewed. Contact: Edward English (202) 493-6321.

**Task 97-4 and Task 97-5—Defining Positive Train Control (PTC) functionalities, describing available technologies, evaluating costs and benefits of potential systems, and considering implementation opportunities and challenges, including demonstration and deployment.**

**Task 97-6—Revising various regulations to address the safety implications of processor-based signal and train control technologies, including communications-based operating systems.** These three tasks were accepted on September 30, 1997, and assigned to a single Working Group. A Data and Implementation Task Force, formed to address issues such as assessment of costs and benefits and technical readiness, completed a report on the future of PTC systems. The report was accepted as RSAC's Report to the Administrator at the September 8, 1999, meeting. The Standards Task Force, formed to develop PTC standards, is developing draft recommendations for performance-based standards for processor-based signal and train control standards for presentation to the RSAC. Contact: Grady Cothen (202) 493-6302.

**Task 97-7—Determining damages qualifying an event as a reportable train accident.** This Task was accepted on September 30, 1997. A working group

was formed to address this task and conducted their initial meeting February 8, 1999. Contact: Robert Finkelstein (202) 493-6280.

**Task 00-1—Determining the need to amend regulations protecting persons who work on, under, or between rolling equipment and persons applying, removing or inspecting rear end marking devices.** A working group is being formed. Contact: Tom Keane (202) 493-6234.

Please refer to the notice published in the **Federal Register** on March 11, 1996 (61 FR 9740) for more information about the RSAC.

Issued in Washington, D.C. on May 9, 2000.

**George Gavalla,**

*Associate Administrator for Safety.*

[FR Doc. 00-12111 Filed 5-12-00; 8:45 am]

BILLING CODE 4910-06-P

## DEPARTMENT OF TRANSPORTATION

### Federal Transit Administration

[FTA Docket No. **FTA 00-7347**]

#### Agency Information Collection Activity Under OMB Review

AGENCY: Federal Transit Administration, DOT.

ACTION: Notice of request for comments.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et. seq.), this notice announces that the Information Collection Request (ICR) abstracted below has been forwarded to the Office of Management and Budget (OMB) for extension of a currently approved collection. The ICR describes the nature of the information collection and its expected burden. The **Federal Register** Notice with a 60-day comment period soliciting comments on the following collection of information was published on February 11, 2000 [FR 65 pages 7096 and 7097].

**DATES:** Comments must be submitted before June 14, 2000. A comment to OMB is most effective if OMB receives it within 30 days of publication.

**FOR FURTHER INFORMATION CONTACT:** Sylvia L. Barney, Office of Administration, Office of Management Planning (202) 366-6680.

**SUPPLEMENTARY INFORMATION:**

**Title:** 49 U.S.C. 5312(a) Research, Development, Demonstration and Training Projects.

**Type of Request:** Extension of a currently approved collection.

**OMB Control Number:** 2132-0546.

**Abstract:** 49 U.S.C. Section 5312(a) authorizes the Secretary of

Transportation to make grants or contracts for research, development, and demonstration projects that will reduce urban transportation needs, improve mass transportation service, or help transportation service meet the total urban transportation needs at a minimum cost. In carrying out the provisions of this section, the Secretary is also authorized to request and receive appropriate information from any source.

The information collected is submitted as part of the application for grants and cooperative agreements and is used to determine eligibility of applicants. Collection of this information also provides documentation that the applicants and recipients are meeting program objectives and are complying with FTA Circular 6100.1B and other Federal requirements.

**Estimated Annual Burden Hours:** 13,940 hours.

**ADDRESSES:** Send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725-17th Street, NW, Washington, DC 20503, Attention: FTA Desk Officer.

**Comments Are Invited On:** Whether the proposed collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; the accuracy of the Department's estimate of the burden of the proposed information collection; ways to enhance the quality, utility and clarity of the information to be collected; and ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology.

Issued: May 10, 2000.

**Dorrie Y. Aldrich,**

*Associate Administrator for Administration.*

[FR Doc. 00-12161 Filed 5-12-00; 8:45 am]

BILLING CODE 4910-57-P

## DEPARTMENT OF TRANSPORTATION

### Surface Transportation Board

[STB Finance Docket No. **33872**]

#### Alabama & Gulf Coast Railway LLC— Trackage Rights Exemption—The Burlington Northern and Santa Fe Railway Company

The Burlington Northern and Santa Fe Railway Company has agreed to grant overhead trackage rights to Alabama & Gulf Coast Railway LLC (AGC) of Monroeville, AL, between the end of



## ***RSAC MEMBERSHIP LIST***

**Association of State Rail Safety Managers (1 seat)**

**American Association of Private Railroad Car Owners (AARPCO)(1 seat)**

**American Association of State Highway & Transportation Officials (AASHTO)(1 seat)**

**American Public Transit Association (APTA)(2 seats)**

**American Short Line and Regional Railroad Association (ASLRRA)(3 seats)**

**American Train Dispatchers Department/BLE (ATDD/BLE)(1 seat)**

**Association of American Railroads (AAR)( 12 seats)**

**Association of Railway Museums (ARM)(1 seat)**

**Brotherhood of Locomotive Engineers (BLE)(2 seats)**

**Brotherhood of Maintenance of Way Employees (BMWE)(2 seats)**

**Brotherhood of Railroad Signalmen (BRS)(2 seats)**

**High Speed Rail/Maglev Association (1 seat)**

**Hotel Employees & Restaurant Employees International Union (1 seat)**

**International Association of Machinists and Aerospace Workers (1 seat)**

**International Brotherhood of Boilermakers and Blacksmiths (1 seat)**

**International Brotherhood of Electrical Workers (IBEW)(1 seat)**

**National Association of Railroad Passengers (NARP)(1 seat)**

**National Conference of Firemen & Oilers (1 seat)**

**National Railroad Construction and Maintenance Association (1 seat)**

**National Railroad Passenger Corporation (Amtrak) (1 seat)**

**Railway Progress Institute (RPI)(1 seat)**

**Safe Travel America (1 seat)**

**Secretaria de Comunicaciones y Transporte (1 non-voting seat)**

**Sheet Metal Workers International Association (1 seat)**

**Tourist Railway Association Inc. (1 seat)**

**Transport Canada (1 non-voting seat)**

**Transport Workers Union of America (TWUA)(2 seats)**

**Transportation Communications International Union/BRC (TCIU/BRC)(3 seats:)**

**United Transportation Union (UTU) (2 seats)**

**National Transportation Safety Board (NTSB) (non-voting/advisory)**

**Federal Transit Administration (FTA)(non-voting/advisory)**

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**American Short Line and Regional Railroad Association (ASLRRA)(3 seats)**

**American Train Dispatchers Department/BLE (ATDD/BLE)(1 seat)**

**Association of American Railroads (AAR)(12 seats)**

**Association of Railway Museums (ARM)(1 seat)**

**Brotherhood of Locomotive Engineers (BLE)(2 seats)**

**Brotherhood of Maintenance of Way Employees (BMWE)(2 seats)**

**Brotherhood of Railroad Signalmen (BRS)(2 seats)**

**High Speed Rail/Maglev Association (1 seat)**

**Hotel Employees & Restaurant Employees International Union (1 seat)**

**International Association of Machinists and Aerospace Workers (1 seat)**

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**National Railroad Construction and Maintenance Association (1 seat)**

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**National Transportation Safety Board (NTSB) (non-voting/advisory)**

**Federal Transit Administration (FTA)(non-voting/advisory)**



U.S. Department  
of Transportation

Federal Railroad  
Administration

(Insert at Tab 19)

**Railroad Safety Advisory Committee**  
**Task Statement:**  
**Training and Qualification of Safety-Critical Personnel**  
***(Planning Task)***

**Task No. : 2000-3**

**Date presented to the RSAC: January 28, 2000**

**Purpose:**

To evaluate the adequacy of existing FRA and industry requirements and programs to train, qualify, and document the qualifications of employees and other personnel who perform safety-critical functions, recommending any additional actions that should be taken through the RSAC.

**Description:**

This is a planning task that requires examination of FRA regulations, existing industry programs, and safety data related to the knowledge, skills and abilities of persons who perform safety-critical functions concerning the safety of railroad operations. The fitness of those persons for duty and the discharge by those persons of safety-critical duties may also be considered.

For this purpose, "safety-critical" suggests the ability to have a direct impact on safety and is intended to be comparable to the class of persons performing functions covered by 49 CFR § 209.303 (e.g., persons subject to the Hours of Service Act, persons involved in track safety or equipment safety, and persons in places of responsibility over them). However, the planning group shall retain discretion to expand or refine these classifications.

For reasons of efficiency, the planning group is requested not to engage in detailed, substantive review of recently issued requirements that were based on notice and public comment, such as the revisions to 49 CFR Part 214, Subpart C (Roadway Worker Protection), 49 CFR Part 213 (Track Safety Standards), 49 CFR Part 240 (Qualification and Certification of Locomotive Engineers), 49 CFR Part 238 (Passenger Equipment Safety Standards), or 49 CFR Part 239 (Passenger Train Emergency Preparedness). (III. In addition, specific training requirements regarding Freight Power Brakes are the subject of a separate proceeding for which a final rule was nearing completion as this task statement

was considered.) However, the planning group should consider how any larger system of training or qualification might incorporate, or be dovetailed with, such existing or pending requirements.

**Issues requiring specific report:**

Determine whether safety data indicates any material deficiency in the training or qualification of safety-critical personnel, their fitness for duty, or their commitment to sound discharge of that duty, that warrants further action in which the FRA should participate, including....

- The personnel affected by any such deficiency (by safety-critical function(s));
- The nature of any such FRA participation (e.g., rulemaking, program development, leadership through Safety Assurance and Compliance Programs);
- Identification of other parties that have a stake in successful and proportional resolution of this issue; and
- The nature of the action apparently indicated (e.g., training requirements, formal qualification requirements, and/or certification requirements).

To the extent any such significant, unmet needs are identified for which regulatory action is recommended, the planning group may provide draft RSAC task statements for FRA review.

**Source:**

Request by the United Transportation Union that RSAC consider certification of train conductors.

Expressions of interest in evaluating training, qualification or certification requirements for other safety-critical employees.

**Refer to/establish following working group:**

Training and Qualification Planning Group

**Target dates:**

To be determined by the planning group and reported to the full Committee.

**Disposition:** Postponement of consideration.

**Date:** 1/28/2000

NTSB Safety Recommendations Related to Training  
**Index**  
1971 to April 2000

R71-47 Training and Efficiency Testing  
R76-29 Emergency Procedures  
R76-30 Emergency procedures for cab **evacuation**  
R77-05 Locomotive Engineers  
R79-40 Minimum standards for training of train crews  
R80-06 & 07 Railroad emergency response  
R81-53 Efficiency testing  
R85-51 Two crew member qualified on Locomotive  
R87-66 Selection Training of Dispatchers  
R95-21 Trailer on Flat Car  
R96-55 Steam Locomotives - Basic Responsibilities  
R96-58 Steam Locomotives - Certification of Operators  
R98-07 Formal Training for Retainer Settings  
R98-28 Dispatcher Selection and Training  
R99-2 Fatigue and Work Schedules  
R99-13 Crew Resource Management  
R00-002 Develop informational material for use of medications while on duty  
R00-003 Develop Educational material for use of medications while on duty

## **NTSB RECOMMENDATIONS RELATED TO TRAINING**

**1971- April 2000**

**R71-047** NTSB recommended under the authority of the Railroad Safety Act of 1970, FRA establish a program to review current training procedures for employees on the railroad and on the basis of cooperation with the railroads and the Association of American railroads, **expand** and develop a comprehensive training program applicable to the various crafts, trades and personnel employed in several operational modes. Training should be subject to periodic review by the FRA and should assure by examination that those who complete the training are **qualified** to perform their duties with safety. Board believed Operating Rules were vague.

October 1974 FRA stated through a letter that “work is presently underway in developing guidelines of job skills and training procedures for all classes of railroad employees”.

Recommendation from rear end collision on October 17, 1975, Penn Central Passenger train struck another Penn Central Passenger train. Injuring 25 persons.

**R76-029 & R76-030** Recommendation from rear end collision on October 17, 1975, Penn Central Passenger train struck another Penn Central Passenger train. Injuring 25 persons.

**R76-029** NTSB recommend FRA require carriers to train employees in emergency **procedures** to be used after an accident to establish priorities for emergency action and to conduct **accident** simulations to test the effectiveness of the program, inviting civic emergency personnel participation. The all three aspects of this recommendation have been specifically addressed in final rule for Passenger Train Emergency Preparedness, Title Code 49, Part 223 July 6, 1998.

(1) train employees in emergency procedures to be used after an accident; (2) establish **priorities** for emergency action; and (3) conduct accident simulations to test the effectiveness of the program.

**R76-030** NTSB recommends FRA require railroads to include emergency procedures for cab evacuation in its training program for operating employees.

**R77-005** NTSB recommends FRA require that locomotive engineers be instructed in the **braking** of trains for varied circumstances that may develop during trains operations.

Recommendations from accident involving the derailment of 39 cars on a UP freight train at Hastings, Neb on August 2, 1976. January 4, 1987 collision occurred at Chase, Maryland with Amtrak train and CR lite locomotive consist. This resulted in the **final** rule, Title 49 Code of Federal Regulations, Part 240, “Qualifications for Locomotive Engineers” effective **September** 17, 1991. The program established provides for (1) shall be implemented through review and approval of each railroads operator qualifications standards; (2) shall provide minimum **training** requirements; (3) shall require comprehensive knowledge of applicable railroad operating practices and operating rules.

**R79-040 NTSB** recommends that the **FRA**: promulgate regulations establishing minimum standards for the training of train crews in safe operations of trains and in emergency procedures. Recommendation was the result of collision that occurred on June 9, 1978 at Seabrook, Maryland. Northbound CR commuter train struck the rear of Amtrak injuring 160 passengers. **FRA** feels that Part 240 and Part 239 have satisfied this recommendation.

**R80-006 and 007 NTSB** investigated 10 accidents in the past 10 years. It identified shortcomings in railroad emergency response.

**R81-053 NTSB** recommends to **FRA**: amend 217.9 to require sufficient monitoring to insure that each operating employee is evaluated for compliance with operating rules on a regular basis. Investigation from collision 11/07/80, Conrail freight train struck head end of Amtrak 74 at Dobbs Ferry. 234 persons aboard, 75 passengers and 9 crewmembers were injured.

**R85-051 NTSB** recommends that **FRA** require there be at least two crewmembers on locomotives of Freight trains who are qualified to operate the locomotive, the second person to serve as the assistant to the person in charge. The **NTSB** reviewed major accidents from 1971 to 1985 and identified failure of the engineer to carry out their responsibilities for proper operation of the train.

**R87-66** -recommended **FRA** study the selection process, training, duties and responsibility of train dispatchers to determine if workload is beyond normal stress levels and determine what selection and training standards are used for train dispatchers. It was recommended that **FRA** establish selection and training standards and workload limits for dispatchers. In the **NTSB** report relating to Devine, TX 6/25/98 the board stated **FRA** only partially met the intent of this recommendation by conducting a study in 1995, to Congress, of the selection, training, duties and responsibilities of train dispatchers. The **FRA** found several shortcomings regarding training and testing. As a result of the study In 1998 the **NTSB** classified this recommendation as Closed - Unacceptable Action/Superseded.

Study was conducted in response to Rail Safety Improvement Act (Public Law 100-342) 1988 amended section 202 of the Federal Railroad Safety of 1970.

Recommendation result of Amtrak derailment at Fall River, Wisconsin, October 9, 1986.

**Devoe Report April 1974** - An Analysis of the Job of the Railroad Train Dispatcher  
Rail Safety Improvement Act 1988 (public Law 100-342) study completed in 1988 released in May 1990.

National Train Dispatcher Safety Assessment of July 1990  
Study 1995 to Congress

**R95-21** concerning trailer on flat car (TOFC) and container on flat car (COFC) loading and **securement** safety.

May 16, 1994 Smithfield, North Carolina a trailer not completely secured on its flat car **shifted** off the car and struck an Amtrak Train. Amtrak Asst Engineer was killed and 11 Amtrak Passengers and crew were seriously injured. In September 1994 FRA did a Safety study, "Trailer on Flat Car (TOFC) and Container on Flat Car (COFC) Loading and Securement Safety Study". FRA researched accident/incidents relating to this for years 1983 to 1993 and audited 63 TOFC/COFC loading sites across the country. They found 108 accident/incidents with 60% caused by load **securement**, 30% lading or cargo, 10% other causes. FRA identified seven recommendations which included establishing a uniform minimum set of training **requirements**. FRA recommended the seven recommendations be resolved through partnership.

July 8, 1997 Crystal City VA a CSX intermodal train with a shifted container brushed a **passing** Amtrak Train resulting in minor injuries. FRA developed a four phase approach of training federal and state motive power and equipment and hazardous materials inspectors.

**R96-55 & 58** were issued after the **firebox** crownsheet of Gettysburg Passenger Service Inc steam locomotive 1278 failed while pulling a six car excursion train near **Gardners**, Penn on June 16, 1995. The engineer and two fireman were severely burned.

**R96-55** Steam Locomotives - Describe basic responsibilities and procedures for functions required by regulation, such as blowing down the water glass & washing the boiler. Effective Jan 2000, Part 230 Inspection and Maintenance Standards for Steam Locomotives described basic responsibilities and procedures for functions required by regulation. In **addition** Vole Center has produced a training video for steam locomotive operators for FRA relating to daily inspections.

**R96-58** Steam Locomotives - Certification of Operators - Develop certification criteria and require that steam locomotive operators and maintenance personnel be periodically certified to operate and or maintain a steam locomotive.

Jan 7, 2000, final rule 49 CFR Part 230, "Inspection and Maintenance Standards for Steam Locomotives" became effective, while it did not require a certification program for steam locomotive operators and maintenance personnel, the final rule does address for the first **time**, the issue of qualifications required for individuals making repairs to steam locomotives.

**R98-07** NTSB recommended formal training for retainer settings - "Require railroads to implement formal training on correct retainer setting and use procedures for train crew **members** who may set or use air brake retainer valves as a result of derailment of UP freight train near **Kelso**, CA on January 12, 1997. We reported to the Board in our initial response the Part 240 should be sufficient and that retainers were no longer used. The Board responded and stated that if retainers are no longer in use why have the railroads continued to maintain them. Since **that** time we have done a survey and found that retainers are still being utilized. NTSB's Recommendation is being considered in our revisions to the Power Brake Law.



**R98-28 NTSB recommended Dispatcher selection and Training-** “Develop and establish dispatcher selection and training standards, dispatcher trainer standards and workload limits for dispatchers by January 1, 2000”.

Recommendation received as the result of head-on Collision of two UP freight trains at Devine, Texas on June 22, 1997. 4 fatalities and 2 injuries resulted from the collision. We advised the Board of the studies we have conducted and workshops with the railroads we have held. The Board maintains that dispatcher training standards were still a problem that needed to be resolved.

**R99-2 NTSB recommended FRA establish within 2 years scientifically based hours of service** regulations that set limits on hours of service, provide predictable work and rest schedules and consider circadian rhythms and human sleep and rest requirements. We initially responded to this recommendation stating that there were provisions in the “Federal Railroad Safety Enhancement Act of 1999” that would require railroad’s to submit a fatigue management plan to the FRA that addresses some of the concerns in this recommendation. The recommendation was the result of the NTSB investigating several accidents that involved operator fatigue. The NTSB contends other modes have begun educational programs related to fatigue but the railroads have not.

**R99-13 Recommendation** was the result of collision of NS freight train and CR at Butler, Indiana. The conductor was killed and two other crew members were **injured**.

**Recommendation- Develop and Require Crew Resource Management Training** - “In cooperation with Class I railroads, the American Short Line and Regional Railroad Association, the Brotherhood of Locomotive Engineers, and the United Transportation Union, develop and require, for all crew members, crew resource management training that addresses, at a minimum:

crew member proficiency, situational awareness, effective communication/ teamwork and strategies for appropriately challenging and questioning authority”. Further the Board issued The Board refers to studies and crew resource management programs found in the airline industry. We acknowledge these studies and in answer conduct an “Intimidation and Harassment Roundtable” in Washington D C on October 21, 1997 to address the many aspects of real and perceived intimidation and harassment of railroad employees and to discuss how the railroad industry safety culture can be improved. It is the FRA’s position that employees should not be placed in the position that they must choose between maintaining their employment versus compromising their safety. FRA initiated the Switching Operations Fatalities Analysis (SOFA) Working Group a study for 76 employee fatalities that has the potential for a CRM training application.

**R00-002 and R00-003** The **NTSB** investigated many accidents in all passenger transportation modes in which the use of a licit medication by a vehicle operator has been causal or contributory. This report involves not only the use of illegal drugs but over the counter and prescription medications.

**R00-002** Develop and Publish Hazard Information - “Develop, then periodically publish, an easy to understand source of information for train operating **crewmembers** on the hazards of using specific medications when performing their duties.”.

**R00-003** Educational Program for Medical Hazards - “Establish and implement an educational program targeting train operating crewmembers that, at a minimum, ensures that all crewmembers are aware of the source of information described in Safety Recommendation **F-00-002** regarding the hazards of using specific medications when performing their duties. The office of the Secretary of Transportation has assembled representatives from each mode to discuss these recommendations and establish uniform criteria. **FRA** is working with the Office of Secretary of Transportation and each mode to achieve the intent of these **recommendations**.”.

May 8, 2000

Mrs. Jolene M. Molitoris, Administrator  
Federal Railroad Administration  
1120 Vermont Avenue, NW - MS-5  
Washington, DC 20590

RE: Training and Certification of Safety Critical Employees

Dear Jolene:

Current law and regulations define safety critical railroad employees as those employees covered by both hours of service and drug testing laws. These laws and regulations cover the members of our two unions. We think safety will be improved in our industry if standards for training and certification of these employees were developed.

Please consider this letter as a formal request to include on the agenda a discussion of training and certification of safety critical employees at our next full **RSAC** meeting. We would like to have the **RSAC** accept this task and create a working group to formulate training and certification standards for these identified employees.

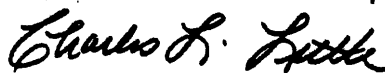
The **RSAC** has considered and discussed the certification process on more than one occasion, but has not come to a consensus on the focus and scope of training and certification for safety critical railroad employees. The **US Congress** has focused attention on safety critical employees in our industry by inclusion in hours of service and federal drug testing laws.

We appreciate your past support for training standards.

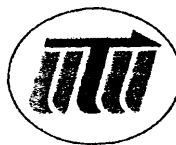
Sincerely yours,



W. Dan Pickett  
President - Brotherhood  
of Railroad Signalmen



Charles L. Little  
President - United  
Transportation Union



cc: ✓ G. A. Gavalla  
C. E. Dettman, AAR  
F. R. Hooper, APTA



U.S. Department  
of Transportation

Federal Railroad  
Administration

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# **THE SAFETY ASSURANCE AND COMPLIANCE PROGRAM (SACP)**

## **ACCOMPLISHMENTS FOR 1999 AND FIRST QUARTER 2000**

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**FEDERAL RAILROAD ADMINISTRATION  
SAFETY ASSURANCE AND COMPLIANCE PROGRAM  
ACCOMPLISHMENTS FOR 1999 AND FIRST QUARTER 2000**

**I. The Report**

**Background**

The Federal Railroad Administration (FRA) ensures the safety of the Nation's railroad industry through the promulgation of safety regulations and on-site monitoring of railroad operations. FRA directs 370 Federal inspectors and 150 State inspectors who oversee more than 675 railroads with more than 220,000 employees, 200,000 miles of track with 257,716 highway-rail grade crossings, 1.3 million freight cars, 20,000 freight locomotives and 8,880 passenger locomotives, coaches and self-powered coaches. In addition, there are more than 100,000 railroad bridges which need to be evaluated and inspected. The rapid growth of new railroads and traffic gains in recent years has increased demands on monitoring railroad industry compliance with safety regulations covering track, equipment, signals, transportation of hazardous materials, and operating practices. Because of the limited number of Federal and State inspectors, the efficient uses of these resources are critical.

The Agency traditionally relied upon site-specific inspections that focused on regulatory compliance as the primary means of safety oversight. While railroad safety had improved steadily since 1978, FRA was frustrated by the slow pace of progress. In addition, rail traffic has grown more than 50 percent since 1986. This dramatic increase significantly taxed FRA's resources and slowed the pace of safety improvements. In 1994, FRA responded to President Clinton's directive to "reinvent government" by developing a new approach to safety oversight known as the Safety Assurance and Compliance Program (SACP).

SACP is radically innovative because it brings a systems-analysis approach to safety oversight, provides a vehicle for the Agency to address safety issues outside the realm of regulation, and reduces the adversarial relationship that often exists between the regulator and the regulated community. Through SACP, railroad labor and management have engaged in collaborative partnerships with FRA to help identify and solve problems related to rail safety.

The initial SACP used a team of FRA field and headquarters safety specialists, under direction of a project manager, to conduct coordinated safety assessments of an entire railroad's operations. This included an analysis of all accident and inspection data over a five-year period to determine historic trends and large-scale site inspections in all railroad disciplines to gain a first hand look at current conditions. Also, "listening sessions" were held with railroad employees, union representatives, supervisors and managers—those most intimately involved in railroad safety to learn about their safety concerns. To foster cooperation, FRA exercised enforcement discretion regarding safety violations that are voluntarily disclosed through this process. From the information gathered, the FRA team identified systemic safety problems, which may include issues that are not subject to Federal safety regulations, and made recommendations to address root causes of the problems. FRA's findings and recommendations were presented to rail management and rail labor leaders in "Senior Management Meetings" to ensure that safety problems were brought to the attention of the company's decision makers. The railroad developed a Safety Action Plan (SAP), usually in conjunction with labor and FRA, that provided detailed corrective actions and a schedule for implementation. The FRA team monitored the implementation of the SAP and its effectiveness in solving problems.

## **SACP - Evolutionary Process**

Since its inception, the SACP has undergone an evolutionary process. As previously discussed, when first initiated, FRA envisioned only one type of SACP examination: the audit model. Actual use of the SACP in a variety of different environments and management cultures for several years provided valuable insights which enabled FRA to identify the most positive aspects of the program. FRA saw what worked well and what needed improvement. For example, the identification and correction of root causes that involved employee fatigue management (a major safety concern) and internal process changes on the largest railroads did not lend it to an audit type project.

This experience and innovative leadership by FRA, State partners, railroad management and labor organizations resulted in gradual shifts and changes in application of SACP. The cumulative effect was to significantly add to the depth of SACP and to the adoption of “best practices” options for correction of safety issues and program processes. The experience also helped to identify areas where changes were needed to improve the overall effectiveness of SACP.

Recent “FRA Customer” surveys have shown overwhelming support for SACP. Rail labor and management agree on the safety improvement benefits of the program. The customer surveys indicate general agreement that the original “audit model” process outlined in FRA’s October 1996 report to Congress on SACP remains valid in principle and practice primarily for small railroads or specific facilities. However, a different kind of SACP review—the ongoing partnership—has become the norm for the larger railroads.

As shown in the cross cutting matrix of key SACP issues and accomplishments that follows, all SACP projects are not alike. FRA is working in partnership with rail labor and management to institutionalize the best existing practices and to continue to make improvements to increase effectiveness.

### **Systems Approach - Rectifying the Root Cause**

SACP has resulted in more efficient mitigation of safety problems. For example, by using the “systems” approach to safety, a malfunctioning train signal at a specific location was traced to a software design error in the central dispatching system. In identifying and rectifying the root cause of the problem, SACP corrected potential signal problems at 400 other locations throughout the system.

### **Benefit of Partnership - When FRA Lacks Regulatory Authority**

By fostering collaborative partnerships, FRA has gained the cooperation of rail labor and management in addressing safety-critical issues in areas where the Agency lacks regulatory authority. For example, a SACP investigation of a series of highway-rail grade crossing signal failures revealed inadequate training of the signal maintenance forces as the root cause. Despite the lack of regulations, mandating signal maintenance employee training, SACP participation persuaded the railroad to develop a training course for more than 140 signal employees. The result was a 60 percent decline in crossing-signal failures.

### **Partnership Success Story - Switching Operations Fatality Analysis Task Force (SOFA)**

To eliminate train and engine service employee fatalities, FRA and 13 representatives from rail labor and management (the SOFA Task Force) conducted a detailed fact-finding review and

analysis of 72 train and engine service employee fatalities that occurred between 1992 and 1998, to determine whether trends or patterns could be found, to identify best practices, and, if possible, formulate recommendations for the entire industry based on the findings.

The SOFA Task Force published their findings in October 1999. Through the SACP process, each railroad is implementing the recommendations that benefit their safety program. The SOFA report provided specific recommendations which will improve protection for employees adjusting draw bars or installing an end-of train device and for employees who were being injured by equipment from other trains on adjacent tracks; improve crew communication; and improve training of less experienced employees. Possible contributing factors were evaluated and database improvements were suggested to provide a broader range of information on contributing factors and to produce more uniform data for analysis.

### **First-Ever Partnership on a Class I Railroad to Assess Maintenance-of-Way Staffing Levels**

Representatives from CSX Transportation Incorporated (CSXT), the Brotherhood of Maintenance of Way Employees (BMWE), State track inspection forces, and FRA participated in the first-ever partnership initiative on a Class I railroad to assess maintenance-of-way staffing levels. Comprehensive track and bridge inspections were conducted on the Chesapeake and Ohio Business Unit in the States of Kentucky, Ohio, Virginia and West Virginia. The inspections encompassed 1,775 miles of main track, 225 miles of sidings and 173 miles of yard track. FRA and State track inspectors also conducted walking inspections of 1,122 main line turnouts and 533 yard turnouts. A total of 13,594 records was reviewed. Listening sessions were conducted with 330 CSXT employees and first-line supervisors who are responsible for maintaining track structures and bridges at 16 different locations across the four state area.

FRA track inspectors evaluated system-wide data on CSXT staffing levels and track component replacement levels, coupled with site-specific track inspections, to determine if there were systemic or localized problems that needed correction. On July 21, 1999, FRA requested that CSXT submit a formal SACP Action Plan to address the problems in the areas of: maintenance-of-way manpower levels, replacement of rail, ties, and ballast, and track surface renewal. CSXT responded with a written SAP to address FRA's findings.

In January 2000, FRA conducted listening sessions and follow up audits and found that the track conditions had deteriorated to the point of not complying with the track standards. Also, numerous roadway worker protection problems were identified as well as a lack of regular mechanized gang cycle frequencies necessary to adequately maintain track segments. These draft findings were presented to CSXT in March 2000. On April 11, 2000, CSXT announced several senior management changes and committed to operating a fundamentally different railroad. FRA will be actively monitoring CSXT's adherence to the Compliance Agreement signed by FRA's Administrator, Jolene M. Molitoris and CSXT's Chairman John Snow on April 20, 2000.

### **SACP Success Story: Region 3**

As part of Region 3's efforts to reduce the number of accidents, injuries and hazardous materials incidents, a data analysis of all major terminal operations within Region 3 was undertaken. The data was reviewed for the period January 1, 1998, through March 31, 1999. Analysis of the resultant data indicated that the terminal operations in Memphis, TN, had the highest number (32) accidents/incidents reported during the covered time period.



The study entailed a comprehensive safety review of all railroad operations within the Memphis Terminal from March 1 through July 31, 1999. The railroads encompassed by this safety review were the Burlington Northern Santa Fe Railway (BNSF), Canadian National Illinois Central (CNIC), CSXT, Norfolk Southern Corporation (NS), Union Pacific Railroad (UP), National Railroad Passenger Corporation (Amtrak) and the Memphis Area Transit Authority (MATA).

In reviewing the Memphis Terminal operations, the Region utilized a multi-discipline team inspection strategy based on the SACP model. The individual railroads in the Memphis Terminal were evaluated to determine compliance with the requirements of FRA regulations. FRA inspection teams actively involved railroad labor and management in this review.

During the last week in November, Region 3 management met with Memphis area rail labor leaders and terminal managers of each of the Class I railroads involved in the review. Attention was focused on FRA's industry-wide safety initiative to reduce human-factor-caused accidents. The findings of the SOFA Task Force was also presented. The meetings were successful and resulted in the development of genuine partnerships and action plans for reducing human-factor caused accidents. The review identified problems on each of the properties. These have either been corrected, or are in the process of being corrected.

#### **Shortline Success Story**

As part of the SACP project in the South Florida Rail Corridor, Region 3 facilitated the parties coming together to address trespasser and crossing safety issues. FRA was able to focus attention that trespassing was a universal problem and that the carriers should work together to develop a unified approach. This led to a joint effort with the City of Miami to address trespassing on the Florida East Coast Railway (FEC) in the Liberty City section of the city. FRA worked with FEC, Amtrak, Tri-Rail, and city agencies to develop an educational fair that included a railroad locomotive that was open for tours. The FEC railroad security reports that since the partnership effort with the Liberty City community, incidents of vandalism and trespassing incidents have been significantly reduced.

#### **Success Story: Houston Terminal Safety Action Plan**

An ongoing SAP at the Houston Terminal has reduced a very high track-caused derailment rate of 50 or more per month in 1997 to two or three minor incidents per month in 1999.

#### **Success Story: Montana Rail Link (MRL)**

Region 8 management worked directly with the President and Vice Presidents of MRL to address crucial safety and cultural issues. As a result, MRL's safety record improved from 13 injuries per 200,000 man hours at its start-up in 1987, to 1.5 in 1998. MRL was subsequently recognized nationally when awarded the annual Harriman Bronze Medal Award for Safety.

#### **SACP Benefit - Direct Investments in Safety**

SACP has also enabled FRA to persuade the rail industry to make direct investments in safety. For example, one commuter railroad invested an additional \$8 million in maintenance and training. The UP hired more than 5,800 railroad workers in 1998, more than 1,400 in 1999 and plans to hire more than 1,300 in 2,000, in response to SACP findings that it was significantly understaffed.

### Best Measure of Effectiveness - Railroad Safety Performance

Under SACP, the last six years have been the safest in the railroad industry's history. The data below compares the rail industry safety improvements for 1993, the final year for which site-specific only inspections occurred, and 1999.

	<b>1993</b>	<b>1999 *</b>	<b>Percent Improvement <u>1993-1999</u></b>
Train Accident Rate	4.25	3.74	12.0 %
Rail-Related Fatalities	1,279	915	28.5
Rail Employee Fatalities, Injuries, and Illnesses	15,363	8,420	45.2
Grade Crossing Fatalities	626	402	35.8
Trespasser Fatalities	523	474	9.4
Employee Fatalities	47	31	34.0

\* 1999 is preliminary as of April 26, 2000.

### Class I Railroads

#### Percentage Change from 1996 to 1999

- NS total accidents and incidents fatalities decreased 4 percent and trespasser fatalities fell 18 percent.
- UP total accidents and incidents fatalities decreased 4 percent and grade crossing incidents dropped 27 percent. FRA representatives met with UP rail labor and management 348 times in 1998 and 264 times in 1999, to conduct SACP forums and 550 SACP safety committees are addressing safety and health issues, participating in safety audits and training, and communicating safety awareness information.
- CSXT employee fatalities decreased 100 percent. For the first time in over a decade, CSXT did not have an employee fatality in 1999. A total of 51 fatalities had occurred in the prior ten years.
- BNSF total accidents and incidents fatalities decreased 25 percent, and grade crossing incidents fell 17 percent.
- Amtrak total accidents and incidents decreased 12 percent, and train accidents fell 10 percent.

In Fiscal Year 1999, approximately 30 percent of FRA's Office of Safety resources was directed toward SACP activities. The following is a matrix of major accomplishments for year 1999 and 1<sup>st</sup> Quarter 2000.

## II. FRA MATRIX of Year 1999 and 1<sup>st</sup> Quarter 2000 Accomplishments

Cultural Transformation Highlights - Pages 11 - 15						
NS	BNSF	UP	CSXT	AMTRAK	KCS	IC
Page 11	Page 12	Page 12	Page 13	Page 13	Page 14	Page 14
On May 10, issued a joint General Safety Bulletin to all employees specifying what is expected of company officers to ensure that employees injured on the job received prompt medical care. Goal is to eliminate harassment and intimidation.	BNSF is implementing the 5 year strategic plan approved on July 23, 1999. The plan establishes a process for referral of safety issues to the systems group and resolved 40 outstanding safety issues.	The culture working group developed safety accountability performance standards for managers which holds managers accountable for rules, actions of noncompliance, and improper administration of discipline matters	CSXT's new Individual Development and Personal Accountability Policy continues to be the cornerstone for cultural transformation. Employee suspensions and disciplines continue to be very low in comparison to statistics prior to implementation. Most cases requiring discipline involve alcohol and drug test positive results and operating rules 240 violations (Locomotive Employee Certification).	FRA is partnering with Amtrak labor and management to improve the safety culture through the consolidation of 8 outdated Amtrak safety rule books into one book. FRA envisions that the new rule book will initiate fundamental changes in the culture.	Successful partnerships involving the car inspector's craft, dispatchers and signal personnel, at both a system and local level were formed and complaints dropped significantly.	The FRA conducted numerous listening sessions throughout IC. The IC Chief Executive Officer traveled through out the IC holding breakfast and lunch meetings in an effort to resolve some of the perceived problems.  Senior managers were told that the Vice President of Operations would not tolerate abuse, harassment or intimidation of employees.  The process established an open line of communication and a means of free expression without fear of intimidation or reprisal.
Page 11	Page 12	Page 12	Page 13	Page 14	Page 14	
On January 1, 2000, implemented a System Teamwork Responsibility Training (START) program. START involves union officials in the disciplinary process and relies on alternative training rather than disciplinary hearings for minor rules infractions. START divides rules violations into 3 categories: minor, serious and major.	After suspension of the controversial railroad policy, the BLE and the UTU successfully negotiated an agreement with the BNSF on attendance policy for train and engine service employees.	Monumental changes were implemented which resulted in a 53 percent reduction in active discipline cases. The change in policy reflects a culture shift from punitive actions to education, training and counseling of employees.	A brand new safety program with the BMWE was implemented. Under the new program, BMWE selects whom they want to run the program, and CSXT pays the salaries of the union reps selected.	On December 14, 1999, FRA facilitated a meeting which resulted in the formation of an Amtrak West SACP to address Amtrak safety issues in California, Oregon and Washington. Amtrak pledges its support and 27 members met on March 15, 2000.	Partnership teams of Train & Yard personnel and Track workers have been meeting monthly and are successfully resolving problems though focused audits.	

## SACP Process Improvements Highlights - Pages 15 - 23

NS	BNSF	UP	CSXT	AMTRAK	KCS	IC
<p>Page 15</p> <p>The Fatality Analysis Team conducted an analysis of two incidents that resulted in employee fatalities to determine the root cause. The analysis included a look at all policies and work practices that may have contributed to the accidents. The Team implemented plans to prevent similar incidents.</p>	<p>Page 16</p> <p>The Hazardous Materials SACP team completely eliminated the serious defect problems (ten percent defect ratio in 1998) with the BNSF shipment of hazardous materials. The inter modal teams, including representatives from major shippers, conducted joint audits throughout the BNSF system and made significant changes in the procedures and training by finding the root causes of the deficiencies.</p>	<p>Page 18</p> <p>The Car and Locomotive working groups concentrated on conducting field audits in those areas on the UP system (which operates in 23 States) with serious defective conditions. All serious defective conditions were repaired during the audits. The audits were used to develop a baseline and an overall system action plan to reduce deficiencies system-wide. After the baseline was established, condensed monitoring plans were provided to FRAs Regions 4, 5, 6, 7, and 8, for a 90-day inspection period. The FRA system monitoring results show that car defects have declined from a system-wide high of 27 percent to an end-of-year total of 13 percent. Locomotive system defects declined from 57 percent to an end-of-year 44.9.</p>	<p>Page 19</p> <p>The Signal and Train Control SACP team implemented a very aggressive plan to mitigate a serious safety concern by eliminating pole line deficiencies across its system. CSXT spent \$29 million in 1998 and \$22 million in 1999. All of the deficiencies have been addressed.</p> <p>The Signal and Train Control SACP team successfully completed five audits which have resulted in better switch maintenance, implementation of a maintenance inspection policy and the regular inspection of insulated rail joints. The issue was closed with the development of written inspection and reporting procedures which were incorporated into CSXT's Engineering and Train Control Maintenance Manuals. CSXT spent \$700,000 in 1998 and \$750,000 in 1999.</p>	<p>Page 21</p> <p>SACP follow-up Audit: The joint Amtrak/Knorr/Alstom/FRA tread brake committee is evaluating tread brake problems (TBU) and will monitor corrective actions to final resolution of this safety issue. To remedy the ineffective TBU problem, Knorr will overhaul all Viewliner TBUs with a target completion date of December 2000. Meanwhile, Amtrak will replace damaged TBU rear boots with the new boots on Horizon and Superliner equipment at periodic maintenance.</p>	<p>Page 22</p> <p>FRA found serious deficiencies in the mandatory periodic inspection and replacement of locomotive air brake components. An intensive and closely monitored action plan resulted in the inspection and replacement of all air brake components on the entire fleet in less than three months and the establishment of a program of parts supply and quality assurance that has met FRA's expectations.</p>	<p>Page 23</p> <p>Audits were conducted of the IC's internal programs. As a result, the IC's Harassment and Intimidation program was completely revised. New procedures were established for conducting Efficiency Tests and Inspections. The IC System Timetable Airbrake &amp; Train Handling Rules were revised. Improvements were made to the IC's Control of Alcohol and Drug Use Program and new procedures were established for the Roadway Worker Protection for individuals working on or about the track, particularly on the (Baton Rouge District). A new procedure for the protection of on-track personnel working within Yard Limits is currently being developed and expected to be instituted across the IC property by April 2000. The IC completely revised the administration and monitoring of their Locomotive Engineer Certification Program.</p>

## SACP Process Improvements (Continued) - Track Highlights - Pages 17- 20

NS	BNSF	UP	CSXT	AMTRAK	KCS	IC
No actions noted.	<p style="text-align: center;">Page 17</p> <p>In accordance with <b>FRA's</b> goal to <b>reduce</b> track related derailments in <b>BNSF</b> and UP train yards, focused team inspections were conducted by the <b>FRA</b> and state partners. As a result, <b>BNSF</b> and UP management developed action plans to ensure that their track inspections are consistent with the action plan, and the quality of their inspections has improved. <b>SACP</b> partnerships, with labor and the <b>BNSF</b>, resulted in the railroad increasing the number of track inspectors and reducing the size of their territories.</p>	<p style="text-align: center;">Page 18</p> <p>The Maintenance of Way (MOW) <b>SACP</b> improved the safety for MOW employees involved in inspection, maintenance, repair, and constructions of tracks and structures.</p>	<p style="text-align: center;">Page 19</p> <p>The <b>FRA</b>, <b>CSXT</b>, and the <b>BMWE</b> participated in the first ever <b>SACP</b> initiative on a Class I railroad to address maintenance of way staffing levels. Comprehensive track and bridge inspections and listening sessions were held with <b>CSXT</b> employees and supervisors. The review encompassed <b>1,755</b> miles of main track, <b>225</b> miles of sidings and <b>173</b> miles of yard track. A total of <b>13,594</b> records was reviewed. The audit report makes recommendations for <b>CSXT</b> to address serious safety issues concerning the adequacy of maintenance-of-way manpower levels, replacement of rail, ties, and ballast, and track surface renewal. Subsequently, <b>CSXT</b> has hired an additional <b>86</b> maintenance-of-way workers and responded with a Safety Action Plan. <b>FRA</b> and State Track Inspectors conducted follow-up field inspections and found that <b>CSXT</b> was not in compliance with the Safety Action Plan. A Compliance Agreement has been signed and will be monitored by <b>FRA</b>.</p>	No actions noted.	No actions noted.	No actions noted.

### Training Improvements - Highlights (Two Issues Per Railroad) - Pages 23 - 27

NS	BNSF	UP	CSXT	AMTRAK	KCS	IC
<p>Page 23</p> <p>The <b>SACP</b> new conductor training program has improved crew utilization, reduced employee fatigue and improved the safe movement of trains. <b>NS</b> streamlined the hiring process reduced the period of time between the interview and training. Also a <b>\$100/week</b> pay raise has reduced attrition.</p>	<p>Page 24</p> <p>Through the <b>SACP</b>, a <b>mentoring</b> program has been developed whereby newly promoted signalman maintainers provide a mentor until they are familiar with their territory.</p>	<p>Page 25</p> <p>To address the root cause of personal injuries, training was provided to mechanical forces on cab signal equipment and event recorders. The training has resulted in a reduction in human caused incidents and injuries.</p>	<p>Page 26</p> <p>The Track <b>SACP</b> team assured that all track inspectors were field <b>certified</b>. As a result, the inspectors are now required to demonstrate their knowledge to senior <b>official</b> and pass a <b>FRA</b> track exam.</p>	<p>Page 27</p> <p>Amtrak will provide training for <b>FRA</b> personnel in mechanical and signal systems for high speed trains. The training will enable <b>FRA</b> to become an effective partner with Amtrak management and labor in ensuring the safe implementation of the high speed operation.</p>	<p>Page 27</p> <p>Based on an audit which found <b>significant deficiencies</b> in train air brake and safety appliance inspections, <b>KCS</b> instituted an Action Plan to retrain every train and engine service employee. There has already been improved compliance.</p>	<p>Page 27</p> <p>The <b>IC</b> has entered into an aggressive training program and has signed a long term agreement with a consulting <b>firm</b> that specializes in the training of engineers, conductors, and trainmen.</p>
<p>Page 23</p> <p>The <b>SACP</b> team produced two training videos on the hazards of switching operations. Labor and management present the material and conduct audits to ensure employee compliance with the safety rule.</p>	<p>Page 24</p> <p><b>BNSF</b> identified all highway-grade crossings on the <b>BNSF</b> that have significant commercial/track traffic and <b>offered</b> track driver educational programs to more than <b>50</b> trucking companies. New approach resulted in a <b>12</b> percent decrease in grade crossing collisions.</p>	<p>Page 25</p> <p>An engineering training program has been implemented which ensures compliance with locomotive engineer certification. All engine service employees have been trained. Supervisors are now performing the required engineer's observations and operational tests for their employees.</p>	<p>Page 26</p> <p>The Roadway Worker (<b>RWP</b>) <b>SACP</b> team developed a comprehensive program for contractors who perform track work on <b>CSXT</b>. Also, a survey was done to determine the employee's knowledge of the <b>RWP</b> rules. Based on the survey, all managers, engineers and contractor personnel were trained on <b>RWP</b> provisions.</p>	<p>Page 27</p> <p><b>FRA</b> developed the train dispatcher training for new dispatchers with no block operator experience. The American Dispatchers Division expressed appreciation to <b>FRA</b> for their involvement.</p>	<p>Page 27</p> <p>Based on an audit, <b>efficiency</b> testing instructions have been revised. New procedures are now in place and every supervisors has been trained on the performance and reporting standards.</p>	<p>Page 27</p> <p>In <b>cooperation</b> with the <b>FRA</b> and rail labor, <b>IC</b> developed and implemented a comprehensive training program for locomotive and car department personnel.</p>

## Fatigue Management Highlights - Pages 28 - 32

NS	BNSF	UP	CSXT	AMTRAK	KCS	IC
<p>Page 28</p> <p>NS revised division superintendent's safety standards to hold them accountable for tie-up on line of road and any excess time a crew member spends awaiting transportation. This action has significantly improved crew utilization, reduced employee fatigue, and safety.</p> <p>The <b>SACP</b> new conductor training program has improved crew utilization, reduced employee fatigue and improved the safe movement of trains.</p>	<p>Page 28</p> <p>The <b>BNSF</b> successfully implemented <b>60</b> programs that allow train and engine crews to have assigned days <b>off</b>. The <b>BNSF</b> pioneered the train crew napping policy in the rail industry and has been successful in changing the General Code of Operating Rules to include rules that allow train crews to nap while on duty which makes napping available as a fatigue countermeasure to most train crews working on the railroads in the western U.S.</p>	<p>Page 28</p> <p>UP developed a program that ensures scheduled crew rest periods and instituted a corporate policy which gives employees a guaranteed right to rest one day <b>after</b> working seven days.</p>	<p>Page 30</p> <p>The <b>CSXT</b> Fatigue Countermeasures <b>SACP</b> team trained employees on train scheduling practices and emergency responses and alertness strategies. <b>84</b> percent of the engineers and <b>46</b> percent of the crews now have assigned days <b>off</b>.</p> <p>The Crew Release <b>SACP</b> team improved the release of train crews within <b>12</b> hours on the Fitzgerald subdivision which represents a <b>50</b> percent improvement since the team was formed. This initiative has resulted in a reduction in crew fatigue and safety accidents associated with fatigue.</p>	<p>Page 31</p> <p>The <b>SACP</b> team is evaluating locomotive engineer fatigue issues; specifically lone-engineer-in <b>-the-</b> cab operations between midnight and <b>6:00</b> a.m. with no supplemental safety features, e.g., automatic trains control, cab signals.</p> <p>While evaluation is underway, Amtrak has committed to placing a second rules qualified engineer on the <b>34</b> identified assignments with a three-hour or greater incursion into midnight to <b>6:00</b> a.m. time period when a second engineer is available.</p>	<p>Page 32</p> <p><b>FRA</b> has been greatly concerned that the demanding <b>service</b> requirements for <b>KCS</b> train and engine employees exceed reasonable expectations based upon current <b>staffing</b> levels. Beyond quality of life issues, <b>FRA</b> was concerned about the cumulative effect of fatigue on the safety of these employees. In March of <b>1999</b>, <b>KCS</b> was a signatory to a landmark agreement between the <b>BLE</b>, <b>UTU</b> and Class I carriers which seeks to solve chronic worker fatigue problems.</p>	<p>Page 32</p> <p>The <b>IC</b> hired three additional dispatchers and three dispatcher trainees to <b>staff</b> their Homewood, Illinois Dispatching Center. The railroad also purchased the <b>G.E. Harris</b> Computer Assisted Dispatching System to replace the Digit Con system that was in place at the beginning of the <b>SACP</b>. The new system is expected to be better integrated into the crew calling system thus reducing or eliminating the many complaints associated with inaccurate train line ups and complaints associated with fatigue.</p>

### **III. Appendix**

#### **Safety Assurance and Compliance Program Accomplishments for 1999 and First Quarter 2000**

##### **Cultural Transformation**

###### Norfolk Southern Railway Corporation (NS)

1. On May 10, 1999, NS issued a joint General Safety Information Bulletin to all employees specifying what is expected of company officers to ensure that employees injured on the job receive prompt and appropriate medical care and are treated with respect. This SAC P team effort will help assuage any negative employee perception about the railroad's resolve to eliminate harassment and intimidation and will also improve the accuracy of reporting of railroad incidents.
2. On January 1, 2000, NS implemented the System Teamwork and Responsibility Training (START) program. START procedures were negotiated between NS management, the United Transportation Union (UTU) and the Brotherhood of Locomotive Engineers (BLE). The START program will involve union officials in the disciplinary process and will rely on alternative training rather than disciplinary hearings for minor rules infractions. It also eliminates formal disciplinary hearings for employees who sustain injuries. Unions have argued that this practice discouraged the reporting of incidents, which in turn may under report results for safety records. START covers the 12,800 train and engine employees represented by the UTU and the BLE.

The START program divides rules violations into three categories: minor, serious, and major. Minor offenses, such as failure to wear safety glasses or come to work when called, will be handled by training. Employees will not be subject to a formal disciplinary hearing unless the employee has three minor offenses in a three-year period; serious offenses, such as speeding or violations that result in personal injury or property damage, will result in no more than a 30-day deferred suspension for the first offense in a three-year period. A second offense in a three-year period will result in no more than a 30-day suspension. Rule violations resulting in injury will be handled under START. Failure to report an injury is a serious offense; and, NS and the unions also agreed to establish an oversight committee with representatives from the company and the unions to review cases and ensure consistent application of the policy.

Under the current program, rules violations were kept in employees' permanent records an accumulation of which could result in suspension or dismissal; major offenses would result in removal from service pending a formal hearing—dismissals for a single offense are possible if the employee is found guilty. Major rule violations include excessive speeding, drugs or alcohol use, theft, fighting, insubordination, weapons possession, passing stop signals, major accidents and other acts that blatantly disregard the rights of other employees or the company, or that endangers the safety of employees or the public; employees will not be disciplined for failing to immediately report an injury provided. The injury is reported as soon as it manifests itself. There will be no disciplinary



hearings for sustaining injuries. However, NS may conduct fact-finding inquiries to determine the cause of the injury.

#### Burlington Northern Santa Fe Railroad (BNSF)

1. The BNSF-SACP team is implementing a five-year strategic safety plan approved on July 23, 1999. The plan establishes a process of employee empowerment and refers safety issues to system groups for resolution. Forty outstanding safety issues related to maintenance-of-way, mechanical and transportation deficiencies have been resolved. The plan calls for a joint effort to ensure the highest level of safety for all, a commitment to adhere to all regulations, a workplace free of harassment and intimidation, and the joint creation of work practices and tools to enable the BNSF employees the opportunity to perform their tasks safely. One immediate result has been improvement in how end-of-train devices are serviced making this operation safer for mechanical employees. The empowerment process itself is now imbedded into the day-to-day decision making.
2. After suspending the controversial railroad availability policy, the BLE and the UTU successfully negotiated an agreement with the BNSF regarding an attendance policy for train and engine service employees.
3. Senior BNSF management has proposed that rail labor organizations participate in the development of a new discipline policy for the railroad. The BNSF-SACP team will be the forum for the development of this new policy.
4. Region 5 has been actively involved in the BNSF SACP to resolve issues regarding operating practices at the BNSF Network Operations Center (NOC) and the joint BNSF-UP Spring, Texas, Dispatching Center. FRA is a stabilizing force in the NOC Safety Council. This council, which consists of BNSF dispatchers and NOC managers is resolving many safety-related issues and was instrumental in the NOC Y2K planning, preparation, testing and plan implementation. Since the region began participating in this council, there have been no formal complaints forwarded to the FRA by the NOC dispatchers.

#### Union Pacific Railroad (UP)

1. Over a fourteen-month period, the SACP Culture working subgroup, developed safety accountability performance standards for managers (called the Business Conduct-Policy Managerial Process). The system-wide policy was approved and subsequently implemented on July 1, 1999. The policy holds managers accountable for rules, actions of noncompliance, and improper administration of discipline matters.
2. The SACP Discipline subgroup, identified disciplinary actions as having a primary effect on employee morale and quality of life. After nine months of study, significant changes were implemented which resulted in a 53 percent reduction in active discipline cases (6,100 cases reduced to 3,000). At the August Oversight Meeting, UP provided the first

results of the program: 35 percent fewer discipline assessments and a 25 percent increase in counseling in lieu of discipline. The changes in policy reflect a culture shift from punitive actions to education, training, and the counseling of employees.

3. FRA, rail labor and management completed the last SACP service unit roll-out in August 1999. The roll-outs provide a mechanism for accountability and guidance on how to separate local safety issues from systemic safety issues. During the February 2000 UP Leadership Conference held in Omaha, several committees identified the successes achieved utilizing the SACP during FY 1999. The Fort Worth Locomotive Shop was recognized for a 78 percent reduction in reportable employee injury occurrences. A focus group was established on March 15, 2000, to review and assess the effects of the SACP roll-outs and to target safety committees having difficulty implementing the SACP methods and process.

#### CSX Corporation Transportation, Inc. (CSXT)

1. The CSXT SACP Team implementation of the new Individual Development and Personal Accountability Policy is the cornerstone for the culture transformation on CSXT. Employee suspensions and dismissals continue to be very low in comparison to those statistics prior to implementation. The majority of cases requiring disciplinary action are the result of Alcohol and Drug positive test results and railroad operating rules violations of 49 CFR 240 (Locomotive Engineer Certification).
2. After months of negotiations, the SACP team successfully implemented a brand-new safety program. This is the first written safety agreement on the CSXT with rail labor and will result in improved safety. Prior to the implementation of the program, the Brotherhood of Maintenance Way Employees (BMWE) was not participating in the safety initiatives of the railroad. Under the new safety program, the BMWE selects whom they want to run the program and CSXT pays the salaries of the union representatives selected (one for each service lane and one for system gangs and one overall system coordinator) for a total of 14 full time safety craft leaders.

#### National Railroad Passenger Corporation (Amtrak)

1. FRA will partner with Amtrak's labor and management, and the Volpe National Transportation Systems Center (Volpe) in a pilot project to improve safety culture, initially through the consolidation of eight outdated Amtrak safety rule books into one safety rule book. FRA envisions that the safety rule book consolidation will initiate fundamental improvement in Amtrak's safety culture.

FRA, Amtrak, and Volpe have entered into a cooperative agreement with the following objectives: improve the overall safety culture; identify measurable safety-related behaviors; identify latent organizational and work conditions; identify embedded cultural barriers; identify relevant organizational issues; document the project; and establish a SACP cooperative safety process between FRA, Amtrak labor, and Amtrak management to continue with other safety culture improvement projects.

Volpe, with the cooperation of Amtrak labor and management, will establish and conduct baseline and follow-up measures to study the safety rule book consolidation, its outcomes, and other safety culture improvement projects. Baseline measures, to be conducted in Boston, Chicago, and Los Angeles, include a survey instrument, observations, focus groups, and injury rate analysis. The survey instrument was initiated in Boston in February 2000. Volpe is scheduled to discuss the effort at the April joint Safety Council meeting.

2. At its June 3 meeting, the Amtrak Joint Labor/Management Safety Council adopted its charter identifying FRA's Amtrak SACP Project Manager as a non-voting standing committee member. On December 14, 1999, FRA facilitated a meeting with Amtrak West, BLE, UTU, and California State to discuss formation of an Amtrak West SACP Committee to address Amtrak safety issues in California, Oregon, and Washington. Purpose and scope were debated and the charter and operating rules of the Amtrak Joint Labor/Management Safety Council were distributed to generate ideas on committee structure. All parties agreed to establish the committee. Invitations to join the committee have also been extended to other labor organizations.

At the committee's second meeting on January 26, 2000, the new Amtrak Assistant Vice President Safety addressed the committee and pledged Amtrak's support. FRA Regions 7 and 8 are represented on the committee with the Region 7 Deputy Regional Administrator serving as facilitator. The team met on March 15. Twenty-seven participants representing Amtrak labor, management, FRA, and the California Public Utilities Commission were in attendance. Discussion items included committee charter/operating rules, operating rules, and movement directives.

#### Kansas City Southern (KCS)

1. Extremely successful partnerships involving the car inspector's craft at both a system and local levels were formed. These reduced tension and resolved issues so well that complaints to FRA dropped to insignificant levels. Similar partnerships involving dispatchers and signal personnel followed that have also produced positive results.
2. Partnership efforts involving train and yard personnel and track maintenance workers had been sporadic largely due to the wide distribution of employees and an ongoing shortage of personnel that made gathering groups of any consequence extremely difficult. However, following three tragic employees' fatalities and a series of focused audits by FRA, active and successful partnerships have now been formed involving both groups. Representatives of both groups now meet in monthly meetings and joined in recent audits of the KCS Dispatching Center and the SOFA projects.

#### Illinois Central Railroad (IC)

1. The initial stages of the IC SACP identified a need for a cultural change in the way the IC managers and labor leaders conducted business. Changes in the adversarial nature of culture needed to be made, particularly in the southern portion of the IC system.

The FRA conducted numerous listening sessions throughout the IC property. The IC's Chief Executive Officer traveled throughout the IC system holding breakfast and brown bag lunch meetings with the employees in an effort to resolve safety culture issues. In addition, the IC Senior vice-president of Operations informed IC's senior managers that he would not tolerate abuse, harassment or intimidation of employees. The SACP process established an open line of communication and a means of free expression without the fear of intimidation or reprisal.

## **SACP Process Improvements and Audit Results**

### **Norfolk Southern Railway Corporation (NS)**

#### **'Accident/Injury Prevention Programs**

- 1 The Fatality Analysis Team conducted an analysis of two incidents that resulted in employee fatalities in order to determine the root cause(s) and appropriate remedial action. The analysis included a candid exploration of all policies and work practices that may have contributed to this accident. The Team developed and implemented detailed action plans to prevent similar incidents in the future.
- 2 In September 1999, the SACP met to review the circumstances surrounding a July 1, 1999, highway-rail grade crossing accident near Decatur, Illinois, that killed the Milepost Industries limousine driver and an NS employee. Two other NS employees were seriously injured.
- 3 In October 1999, the SACP team proposed changes in railroad operating practices which would prevent the recurrence of the fatal injuries sustained by an NS conductor on May 20, 1999, during a switching operation at Ludlow Yard. The conductor was riding on the front step of the a yard locomotive when it struck an unoccupied locomotive.
- 4 In January 2000, the SACP team proposed changes in railroad operating practices which would prevent the recurrence of the fatality of an NS machinist on November 4, 1999. He was struck by a train moving on a track adjacent to the track on which the locomotives he was inspecting/servicing were located. Because of the circumstances surrounding this incident and the importance of teamwork and understanding among all participants in a task, this SACP team is composed of representatives from both operating and non-operating crafts, i.e., UTU, BLE, BRC, IAM, IBEW, as well as NS, and FRA.
- 5 The NS Safety Profile Report (Report) of safety issues identified during the SACP assessment was forwarded to the appropriate labor organizations for their review. With one exception, FRA accepted NS responses to the 41 findings and recommendations. FRA met with NS and each rail labor organization that participated in the SACP to formulate remedial action. All parties agreed to continue the partnership efforts to resolve significant issues.

## Burlington Northern Santa Fe Railroad (BNSF)

### **Grade Crossing Safety and Trespass Prevention**

1. A SACP partnership is placing a renewed emphasis on grade crossing safety. As a result, the BNSF spent more than \$50 million on grade crossing related programs in 1999. BNSF has established 22 grade crossing safety manager positions, as well as eight public project managers to work on grade crossing safety and crossing closures. BNSF was able to close 170 grade crossings in 1999 and has set a goal of closing 600 in 2000.
2. The BNSF in partnership with FRA has established an aggressive "zero tolerance for trespasser" program. This program includes public and law enforcement education, a trespasser reporting process through the Resources Operation Center, installation of "No trespassing" signs, aggressive train inspections, improved environmental design and security equipment, and heightened enforcement.

### **Process Improvements and Audit Results**

1. The Hazardous Materials SACP team successfully eliminated serious defect problems (ten percent defect ratio in 1998) with the BNSF shipments of hazardous materials. Intermodal teams, including representatives from major shippers and FRA, conducted joint audits throughout the BNSF system and made significant changes in the procedures and training following the determination of the root causes of the deficiencies.

The highly successful Hazardous Materials SACP audits were conducted at the major terminals of Hobart, California, Minneapolis, Minnesota, and Denver, Colorado. The terminals were audited for compliance by teams including labor, management and customers of the railroad. Working around the clock, teams inspected all aspects of Hazardous Material transportation and documentation. During the weeks that followed participants contacted and discussed the results of the audits with each customer whose shipments were improper. The team inspections produced immediate and tangible results. An excellent example of which is the significant improvements in a long-standing problem with United Parcel Service documentation. After years of frustration trying to affect meaningful and lasting improvement, inclusion of senior company representatives in the audit teams resulted in significant and permanent changes in quality and accuracy which have been systemic.

2. The Motive Power and Equipment SACP team, reviewed BNSF fatalities caused by equipment collapsing on employees. As a result, BNSF, installed permanent jack pads at all locations where equipment is to be lifted for repairs. Subsequently, there has been zero fatalities or injuries attributable to falling equipment.
3. FRA conducted a joint SACP audit with BNSF managers of their rail equipment accident/incident reporting procedures. This audit identified several systemic problems in communicating reliable data between the various operating and equipment departments.

and the safety department. These problems adversely affected the safety department's ability to accurately report rail equipment damages. As problem areas were identified, BNSF managers were able to affect procedural changes that have greatly increased BNSF's reporting accuracy.

4. In accordance with FRA's goal to reduce track-related derailments in BNSF and UP train yards, focused team inspections were conducted by the FRA and state partners. As a result, BNSF and UP management developed action plans to ensure that their track inspections are consistent with FRA's Track Safety Standards. The quality of subsequent inspections has improved. SACP partnerships, with labor and management, also resulted in the railroad increasing the number of track inspectors and reducing the size of their territories.
5. Region 7 identified Roadway Worker Safety problems related to track occupancy and inaccurate train lineups on the BNSF. This concern was presented to the SACP system oversight committee for review. Using the SACP process, the FRA, CPUC, Arizona Corporation Commission (ACC), BNSF, and BMWF joined together to address the problem. As a result of this partnership, the BNSF added one additional track inspector to each inspection vehicle, and now uses track warrant and Form B authority to protect roadway workers on the Southern California and Arizona Divisions.
6. On June 9, FRA and BNSF met in Fort Worth, Texas, to review compliance with FRA's employee injury reporting requirements. Following an audit of five of the 22 BNSF divisions, FRA identified 133 cases where the carrier was not in compliance with CFR Part 225 Federal regulations (accident/incident reporting). FRA will use the SACP process to gain compliance with the Agency's required levels of reporting accuracy in the future.
7. The SACP team reduced by 75 percent the complexity and volume of documents required to be carried by the operating crews. Crews had been required to carry 25 pounds of documents and rules. Bulletins and orders are now tailored for the territory over which they operate. All BNSF operating rules, safety books, timetables and other instructions are also now available on BNSF's Internet web site giving the crews immediate access to operating rules books, safety books, air brake and train handling instructions, and system special instructions to help identify rules that relate to each other.
8. The BNSF SACP team has been divided into functional groups that allow an individual labor organization and FRA discipline specialist to coordinate directly with senior railroad officers on issues specific to their functions. This organization has greatly increased the number of safety issues that are being resolved.
9. A database has been developed for the tracking of safety issues by the BNSF-SACP team. This database will be shared by railroad labor, management, and FRA personnel at the system and division levels.

10. In 1999 the SACP team conducted an audit of BNSF's Engineer Certification Program and Efficiency Testing Program. The recorded deficiencies are being corrected through an action plan.
11. In 1999, the SACP team conducted an audit of BNSF's rail equipment accident/incident reporting process. Deficiencies in the data interface between the mechanical department's computer program and the safety department's program were observed. A plan was initiated by the railroad to correct these deficiencies.

#### Union Pacific Railroad (UP)

1. The Car and Locomotive working groups concentrated on conducting field audits in those areas on the UP system reporting high levels of equipment defects. The audits were used to develop a baseline and an overall system action plan to reduce equipment defects system-wide. After the baseline was established, monitoring plans were provided to FRAs Regions 4, 5, 6, 7, and 8, for a 90-day inspection period. The FRA system monitoring shows that car defects have declined from a system-wide high of 27 percent to an end-of-year total of 13 percent. Locomotive system defects declined from 57 percent to an end-of-year 44.9 percent.
2. The Signal Working Group partnership reduced occurrences of false proceeds caused by human factors through improved training, and testing. An FRA team met with the supervisors on the construction side of the signal division in Las Vegas, Nevada to address FRA concerns. The UP agreed to train each employee on the proper test and inspections following installation of signal components.
3. The Maintenance of Way (MOW) SACP improved the safety for MOW employees involved in inspection, maintenance, repair, and constructions of tracks and structures. The UP implemented a qualifications process for machine operators and the SACP team is currently reviewing safety concerns specific to protective clothing.
4. Motive Power and Equipment SACP safety inspections in the UP's Roper Yard, Salt Lake City, Utah, revealed a number of UP flat cars with improper safety appliance modifications. It was determined that safety appliances (side handholds) had been removed from the cars and "elongated slots" were roughly cut into the deck of the cars by means of an acetylene torch. These cars are used nationwide and present a personal injury hazard. When advised of this noncomplying condition, the UP initiated an immediate repair program to replace the missing safety appliances on this series of cars.

## CSX Corporation Transportation, Inc. (CSXT)

### **Grade Crossing Improvements**

1. The joint agreement signed by CSXT with FRA, which implemented a \$4.7 million dollar grade crossing awareness program at 28,000 highway/rail crossings for motor vehicle drivers, was a major factor in the collision reduction in 1999. The SACP team met its goal of having emergency information notification signs installed at 28,000 crossings in 20 states a full year ahead of schedule. This program has been expanded to their newly acquired Conrail trackage. The installation improved the ability of local emergency responders and the motoring public to quickly and accurately report when a vehicle is stalled on a crossing, enabling CSXT to take effective measures to prevent an accident. Since implementation, grade crossing collisions are down on CSXT in 1999. CSXT led the Class I railroads with a 16.4 percent reduction (79 fewer collisions) in 1999 vs. 1998.

### **Safety Process Improvements and Audit Results**

1. The FRA, CSXT, and the BMWV participated in the first ever SACP initiative on a Class I railroad to address maintenance of way staffing levels. Comprehensive track and bridge inspections and listening sessions were held with CSXT employees and supervisors. The review encompassed 1,755 miles of main track, 225 miles of sidings and 173 miles of yard track. In addition, the track inspectors executed walking inspections of 1,122 main line turnouts and 533 yard turnouts. A total of 13,594 records was reviewed. The audit report makes recommendations for CSXT to address serious safety issues concerning the adequacy of maintenance-of-way manpower levels, replacement of rail, ties, and ballast, and track surface renewal. Subsequently, CSXT has hired an additional 86 maintenance-of-way workers and CSXT responded to FRA with a written SAP to address FRA's findings. After receiving CSXT's response, FRA and State Track Inspectors conducted follow-up field inspections and employee interviews. FRA found that CSXT was not in compliance with the SAP. A Compliance Agreement has been signed and will be monitored by FRA.
2. The Signal and Train Control (S&TC) SACP team implemented an aggressive plan to eliminate pole line deficiencies across its system. CSXT spent \$29 million in 1998 and \$22 million in 1999. All of the deficiencies have been addressed. CSXT and Conrail Best Practices forms have been distributed to the field accompanied by a training video for each S and TC Specialist in Regions 1 through 6 who are monitoring CSXT's use of the forms and reporting any discrepancies.
3. The Signal and Train Control SACP team completed five audits which have resulted in better switch maintenance, implementation of a maintenance inspection policy, and the regular inspection of insulated rail joints. The issue was closed on July 1, 1999, with the development of written inspection and reporting procedures which were incorporated into CSXT's Engineering and Train Control Maintenance Manuals. CSXT spent \$700,000 in 1998 and \$750,000 in 1999 on these efforts.



4. The SACP resolved the issue of poor visibility of flashlight signals. CSXT spent \$2.5 million in 1998 and \$200,000 in 1999 to correct this concern.
5. At the CSXT Operations Center a SACP team examination showed a total of 16 original audit issues relating to communications, workload, protocols for dispatchers to give/or receive instructions, training, physical structure and security. Each of the original concerns has been corrected or resolved.
6. The Event Recorder Enhancement Team corrected problems with the software used to download and test locomotive event recorders. In addition, CSXT established written procedures for testing each device resulting in a 90 percent improvement in record keeping. Based on the improvement, CSXT is going to switch to "self-testing" recorders, which will eliminate the need to do full range checks at each periodic inspection. CSXT will check the recorders on an annual basis for accuracy.
7. The Calendar Day Inspection (CDI) Process team audit was completed. The new SACP process involves the use of random sampling techniques with conference calls every three weeks to discuss the results of the random sampling. To date there has been a 40 percent improvement in the compliance with 49 CFR 229.2 regulations. All of the former Conrail territories will go through the same process by September 1, 2000. The Motive Power and Equipment SACP team implemented the CDI Program across the CSXT. The program provides written guidelines for the daily inspection of locomotives at each location. The program has resulted in the resolution of many serious safety conditions on the railroad including cracked wheels on locomotives.
8. The SACP team devised a method to tag, mark, or easily identify a defective Trailer on Flat Car (TOFC) hitch, or Container on Flat Car (COFC) component to alert loaders, groundsmen and railroad personnel of defective components before attempting to load a container or trailer onto the equipment. There are no federally mandated standards requiring TOFC/COFC freight cars to be removed from service when securement equipment is defective. In many cases, the car remains in service and interchanged at other railroad facilities where knowledge of the defective condition may not be known. CSXT has agreed to use a bright orange tag, similar to a bad order tag on defective TOFC/COFC components.
9. The Hazardous Materials SACP team found that the hazardous materials crews were not being provided the proper documentation for hazardous materials movements. To prevent regulatory noncompliance, the train dispatcher is now notified if a car containing hazardous material is found without the proper train documentation. The train dispatcher arranges to have an updated CSXT train document delivered to the train crew. If this is not possible, the information required to move will be transmitted to the crew over the radio and printed legibly on a radio waybill form (a new form just created by CSXT). These forms are available at all on duty locations. This initiative has reduced the number of hazardous materials incidents.

10. The SACP team resolved serious deficiencies with loading hazardous materials originating from the Blount Island Marine and Charlestown, South Carolina, facilities. Training was provided to persons responsible for loading ammunition trains. The team is continuing spot inspections at high volume ramps in Chicago, Atlanta, New Orleans, Jacksonville, Philadelphia and Baltimore. Random loads are opened and inspected for proper blocking and bracing; loads not properly blocked/braced are rejected and returned to shipper for corrective action.
11. The mini-audit program developed through the SACP is continuing system-wide. The program requires each terminal manager (TM) to have an employee (labor or management) complete an audit of the facility each month. The TM is responsible for addressing each unsatisfactory condition disclosed by the audit. The form is reviewed by the CSXT regional manager as part of the TM's overall performance rating.
12. The Incidental Reporting SACP team designed and implemented an incidental report which enables CSXT employees to report minor incidents as soon as an injury occurs and to jointly determine a course of action. The benefit has been a reduction in more serious injuries because a thorough root cause analysis is conducted for every incident to determine what changes, if any, must be made to insure there is no recurrence of the incident, and to increase the awareness of the potential for injury.

#### National Railroad Passenger Corporation (Amtrak)

1. The Joint High Speed System Safety Partnership team, consisting of Amtrak management, labor (Brotherhood of Locomotive Engineers and the United Transportation Union), and FRA, is monitoring and verifying the processes and procedures necessary to safely implement the high speed system. The team conducted a joint inspection of the wayside signal system on the Northeast Corridor (NEC) between Boston and New Haven and identified numerous locations in need of safety attention. All parties have agreed to participate in a NEC system safety program process to ensure the safe integration of high speed operations into existing operations. Three division teams will identify and resolve hazards and risks in the New England, Metropolitan, and the Mid-Atlantic divisions. System safety program process training will be conducted by Booz-Allen and Hamilton, Incorporated, consultants.
2. SACP follow-up Audit: The 49 CFR Part 225 (railroad accident/incident reporting) issue has been closed with the submission of the audit team's report to Amtrak. The systemic problem of non reporting and late reporting of passenger and employee injuries has been eliminated. The audit team will return in 2000 to review 1999 records.
3. SACP follow-up Audit: The joint Amtrak/Knorr/Alstom/FRA tread brake committee is evaluating tread brake problems (TBU) and will monitor corrective actions to resolve this safety issue. To remedy the ineffective TBU problem, Knorr will overhaul all Viewliner TBUs with a target completion date of December 2000. Meanwhile, Amtrak will replace damaged TBU rear boots with the new boots on Horizon and Superliner equipment at periodic maintenance. With commitments in place, the committee agreed to disband and

the SACP team agreed to close the issue. This was the last remaining open issue in the Amtrak SACP follow-up Audit.

With the establishment of several partnership initiatives and the completion of the follow-up audit, the finite audit-style SACP has evolved into an ongoing partnership-style SACP.

The last of 22 partnership meetings to ensure the safe migration of the New York Claytor/Scannell Penn Station Control Center into the amphitheater was held on January 20. This successful partnership of FRA, Amtrak, Long Island Rail Road, American Dispatching Division (ATDD), and the Transportation Communications Union provided a forum to raise, address, and resolve safety and work issues. The ATDD expressed appreciation for FRA's involvement.

4. Region I has successfully partnered with Amtrak labor and management to prevent serious injuries and accidents to roadway workers. Since the inception of the Northeast Corridor (NEC) Electrification Project in 1996, FRA has monitored the safety of roadway workers and train operations. The region has helped hasten the advent of high speed train service in the NEC.

#### Kansas City Southern (KCS)

1. The Kansas City Southern SACP Initiative continues to be successful in meeting the need for change on this smallest of Class I railroads. In 1999, FRA became concerned when the train accident rate for KCS continued to show rates of nearly double the national average for Class I railroads. In 1997, KCS reported a train accident ratio of 8.59 compared to the national average of 3.31. In 1998, KCS reported a train accident rate of 7.62 compared to the national average of 3.67. And, after nearly eight years without a fatality, in a period of less than seven months, KCS experienced three fatalities involving train service employees. FRA examined all aspects of KCS maintenance and operation in the last quarter of 1999. As a result, FRA requested improvements in: Locomotive Inspection and Maintenance; Operational Efficiency Testing; Roadway Worker Protection; Hub-Style Operations; Utilization of Train Service employees; Engineering Department Record Keeping; Repair of a major moveable span bridge at Monroe, and Improvements in Dispatching Center Operations.

KCS responded with action plans to address FRA's SACP safety audit concerns. A senior management meeting has planned for early 2000 at which time a report will be delivered on the progress of those action plans.

2. During 1999, FRA found serious deficiencies in the mandatory periodic inspection and replacement of locomotive air brake components. Long-standing noncompliance had created a situation in which FRA no longer had confidence in the carrier's ability to properly inspect or maintain locomotives according to regulations. An intensive and closely monitored action plan resulted in the inspection and replacement of all air brake components on the entire fleet in less than three months and the establishment of a program of parts supply and quality assurance that has met FRA's requirements.

3. The KCS has embarked on a major revitalization of its locomotive fleet through the purchase of new, high horsepower locomotives and the parallel retirement of older, high maintenance and problem maintenance locomotives. As a result, FRA has found a dramatic improvement in locomotive serviceability on the system.

#### Illinois Central Railroad (IC)

1. SACP partnership audits were conducted on a number of the IC's internal programs. As a result, the IC's Harassment and Intimidation program was completely revised. New procedures were also established for conducting Efficiency Tests and Inspections. In addition, the IC System Timetable Airbrake & Train Handling Rules were revised, improvements were made to the IC's Control of Alcohol and Drug Use Program, and new procedures were established for Roadway Worker Protection for individuals working on or about the track, particularly on the (Baton Rouge District). Finally, a new procedure for the protection of on-track personnel working within Yard Limits is currently being developed and expected to be instituted across the IC property by April 2000. The IC completely revised the administration and monitoring of their Locomotive Engineer Certification Program.

### **Training Improvements**

#### Norfolk Southern Railway Corporation (NS)

1. The SACP-collaborated new conductor training program has improved crew utilization, reduced employee fatigue, and improved the safe movement of trains. The hiring process has been streamlined, reducing the period of time between the initial job applicant interview and the start of training to 30 days or less. NS also approved a \$1 00/week pay raise for the participants that equates to a 33 percent pay raise for the employees. This action has reduced turnover and attrition.
2. The SACP team produced two educational videos to simulate the hazards associated with switching operations (switchman crushed between the end platforms of two cars when the drawbars bypassed during an attempted coupling) and moving equipment (conductor walking on the tie ends was struck and killed by equipment approaching from behind). Each of the videos comes with a lesson plan and is designed to facilitate employee participation. Labor and management jointly present the material and conduct follow up audits to ensure employee compliance with the safety rules.
3. The Manpower SACP Team developed a mentoring and training program that will significantly improve the ability of crews to effectively resolve safety concerns in a timely manner. FRA, three NS General Chairmen (labor), three senior labor leaders, the NS Vice President for Labor Relations, and other senior NS staff met to finalize the program. Labor is very pleased with this effort.

### Burlington Northern Santa Fe (BNSF)

1. A SACP-developed lesson plan for continuing education has been distributed to signalmen and signal maintainers on the BNSF. Also, a mentoring program has been developed whereby newly promoted signal maintainers will be provided with a mentor until they are familiar with their assigned territory and the equipment on that territory.
2. A SACP team identified all highway-rail grade crossings on the BNSF that have significant commercial/industrial truck traffic and targeted the user companies for educational training. The new approach resulted in a 12 percent decrease in highway/rail grade crossing collisions in 1998, compared to 1997. The improvement continued into 1999. In 1999, BNSF offered truck driver educational programs to more than 50 major trucking companies. The BNSF-SACP safety team will be working to develop safety partnerships with major trucking companies to provide safety, and Operation Lifesaver training to truck drivers.
3. Using the SACP process, BNSF changed its philosophy toward public education on grade crossing safety in 1999. The carrier switched from using a small group of full-time Operation Lifesaver presenters, to using grade crossing managers to coordinate the activities of more than 200 employee and citizen volunteers.
4. Using the SACP process, BNSF has established a program to partner with local law enforcement personnel. The carrier is providing one-on-one training to police officers, "Roll Call" instruction and videos, joint positive enforcement activities, 315 Officer-on-the-Train events, and 241 Grade Crossing Collision Investigation classes. This program has been certified by the National Sheriff's Association and the International Association of Chiefs of Police.

### Union Pacific Railroad (UP)

1. The FRA and CPUC conducted a complaint investigation at Roseville, California. At issue is the nationwide concern of which craft was properly qualified to move locomotives within the confines of the blue signal area. The UTU believes only hostlers are qualified to perform this duty, while UP believes mechanical craft personnel, if properly trained, can also perform this duty. Region Seven worked with the FRA Associate Administrator for Safety, to form a SACP team of representatives with other FRA regions, the CPUC, and railroad labor and management to resolve the issue. The FRA has no regulatory position indicating a preference as to which craft performs these services as long as the work is performed safely by properly trained individuals and is consistent with federal requirements. This team performed a comprehensive study of the issue and developed a Locomotive Mover Training Program that is intended to be used system-wide by UP.
2. To address the root cause of personal injuries, the Locomotive SACP team proposed training to mechanical forces on distributive power, cab signal equipment, and event

recorders. The training program has resulted in the reduction of human caused incidents and injuries and has increased the employees safety knowledge and skills.

3. An engineer training program has been implemented which ensures compliance with the requirements for locomotive engineer certification. All engine service employees have been trained. Supervisors are now performing the required engineers' observations and operational tests for the employees assigned to them and internal accountability standards have been implemented.
4. The Signal SACP team implemented an in-depth training program to address proper installation, maintenance, and testing procedures for all construction supervisors and employees. The program ensures that all employees are trained, qualified, and supervised and minimizes the potential for equipment-caused incidents and injuries.
5. A SACP-developed training module for contract van drivers and managers is under final review. The module will address fatigue and drowsy driver issues. The module will be given to all contract van drivers/managers beginning in March 2000.
6. The Maintenance of Way working group presented a proposed "Machine Operator Qualification Process" and "Training and Testing Policy" to the Oversight Committee in May of 1999. The qualification processes will insure adequate training and annual certification for machine operators.
7. Field training on electronic record-keeping for train and engine personnel is being conducted by peer trainers. FRA has conducted reviews at various locations to determine the effectiveness of the training, develop accuracy indicators, and measure the commonly recurring errors by crewman. FRA continues to identify data deficiencies and is working in partnership with UP computer programming experts to correct problems.
8. The Hours of Service (HOS) team developed a program to improve compliance with the HOS Act and record-keeping requirements. The program ensures the verification of safety working schedules for operating employees. In addition, all UP dispatchers have received additional training. UP is the first railroad to change their official carrier operating rules to relieve crews before the end of their authorized twelve hours. Also, crew members have their trains secured prior to the expiration of the 12 hours of duty when a relief crew is not available. The result is that trains will not be left unattended without being secured.

CSX Corporation Transportation, Inc. (CSXT)

1. The Track Inspector SACP team established a field certification procedure. As a result, CSXT Track inspectors are now required to demonstrate their practical knowledge to senior officials at CSXT and pass a FRA track safety standards exam. The staff is better trained and has done an improved job of ensuring track safety. An adjunct of this project has been the implementation of a Track Inspection Playbook with three pilot programs in effect system wide on CSXT. The SACP program is designed to improve the field track inspections and develop a standard inspection methodology throughout their system.
2. The Roadway Worker Program (RWP) SACP team developed a comprehensive safety training program for contractors who perform track work on CSXT. The contractors serve as key members of the safety team. CSXT took a leadership role to improve the safety culture throughout their system. The team also conducted a RWP survey to determine the employees' knowledge of RWP rules. As a result of the survey, all CSX T General Managers, engineers, and contractor personnel were trained on RWP provisions.
3. Based on the recommendations of the SACP Train Dispatcher team, CSXT hired 80 new dispatchers and trained 15 new dispatchers on workloads, protocols on how dispatchers receive instructions, physical structures and security. The quality of life concerns of the SACP team were resolved by the remodeling of the dispatching center. These initiatives have resulted in better trained and less fatigued workers.
4. The Crew Utilization SACP team improved the accuracy of the train line-up from 61 percent in January 1999 to 75 percent in June. Seventy-five percent of the crews are now provided with organized work plans concerning their tours of duty. The results have been a significant reduction in fatigue (a primary contributor to safety errors), and a reduction in employees idle time, improved customer confidence in the railroad, and more productive employees.
5. The Signal and Train SACP team developed and implemented a signal and training program for 125 less experienced signal maintainers across the system. The result of the training has been a decline in human-factor related incidents.
6. The CSXT Electronic HOS record keeping deficiencies have been corrected. CSXT has begun training crew callers and is preparing a schedule to implement training in the field. The HOS SACP team will work with CSXT during the training and record review.
7. The SACP team resolved serious deficiencies with loading orders originating from the Blount Island Marine and Charlestown, South Carolina, facilities. Training was provided to persons responsible for loading ammunition trains. Random loads are opened and inspected for proper blocking and bracing; loads not properly blocked/braced are rejected and returned to shipper for corrective action.

### National Railroad Passenger Corporation (Amtrak)

1. Amtrak will provide training for FRA personnel in mechanical and signal systems for the new high speed train service. The training will enable FRA to become an effective partner with Amtrak management and labor in ensuring the safe implementation of the high speed operation.
2. The proposed train dispatcher training program for newly hired dispatchers with no block operator experience, the development of which FRA helped facilitate, allows for training adjustments dependent upon the candidate's needs and subsequent progress. The ATDI expressed appreciation for FRA's involvement.

### Kansas City Southern (KCS)

1. An FRA audit found significant deficiencies in train air brake and safety appliance inspections by KCS train service employees. While the carrier had been doing an adequate job training new employees, the senior conductors and trainmen were not receiving training on new inspection procedures. An action plan calls for retraining virtually every train and engine service employee over the course of the year 2000. Reinspection activity by FRA is already finding improved understanding and compliance in the field.
2. As a result of FRA audits, Efficiency Testing Instructions on KCS have been completely revised. New procedures are now in place. All supervisors are being trained on new performance and reporting standards. Follow-up inspections by FRA have shown significant improvement in both the quality and quantity of testing. Participation by carrier officers in the SOFA audits promises to further improve performance under the new carrier program.

### Illinois Central Railroad (IC)

1. The IC has entered into an aggressive training and hiring program. The railroad has signed a long-term agreement with the consulting firm, Rail Safety and Training Resources. This firm specializes in the training of engineers, conductors, and trainmen.
2. In cooperation with the FRA and rail labor, the IC developed and implemented a comprehensive training program including written, visual/oral instruction and Instructor demonstrated "on-the-job" training for both locomotive and car department personnel. The IC formed both a Locomotive and Car Partnership Councils, consisting of representatives from the FRA, and rail labor and management. The Partnership Councils travel throughout the IC system auditing the various repair shops for compliance with the Federal Regulations.



## **Quality of Life Issues**

### **Fatigue Management and Improvements in Manpower, Staffing and Crew Utilization**

#### Norfolk Southern Railway Corporation (NS)

1. NS revised its Division Superintendent's performance standards to hold them accountable for any train congestion and excess time a crew member must spend on the train awaiting transportation. This action has significantly improved crew utilization, reduced employee fatigue, and improved safety.

#### Burlington Northern Santa Fe

1. The BNSF has successfully implemented more than 60 programs that allow train and engine crews to have assigned days off. The BNSF, which pioneered train crew napping policy in the rail industry, has been successful in changing the railroad industry's General Code of Operating Rules (GCOR) to include rules that allow train crews to nap while on duty. This change in the GCOR makes napping available as a fatigue countermeasure to most train crews working on railroads in the western United States.

#### Union Pacific Railroad (UP)

1. The Fatigue SACP team developed a program that ensures scheduled crew rest periods. Employee fatigue is a major contributing factor to human-factor caused train accidents and poor morale. In addition, UP instituted a corporate policy which gives employees the guaranteed right to rest one day (time-off) after working seven days.
2. Primary accomplishments of the fatigue SACP working group include: development of a fatigue education program for all employees and their families that addresses shift work, sleep disorders and insomnia (program was provided to all employees and families and is on the Internet); and implementation of a napping pilot for operational yard and local crew members on October 11, 1999, at the Houston Terminal. This is the first pilot of its kind in the rail industry that applies to road crewmen.

As of March 1, 2000, there have been 117 work/rest agreements (scheduled work days/guaranteed rest days) ratified for train and engine men. Of those, 64 are implemented and 53 are near implementation. An additional 45 are in various stages of ratification. A total of 139 agreements is currently being negotiated. These represent approximately one-third of the total number of agreements that exist on the UP railroad

3. A fatigue/sleep deprivation video has been developed to address issues encountered by supervisors and managers. The video is currently being mailed to all supervisors and managers.

4. A training module for contract van drivers and managers is under final review. The module will address fatigue and drowsy driver issues. The module will be given to all contract van drivers/managers beginning in March 2000.

### Crew Utilization

1. The SACP working group identified several areas that affect crew behaviors. The concerns pertain to timely relief from work, lodging facilities, crew transportation, and hours on duty accomplishments include the following.

The working group evaluated and made enhancements to the transport service performance standards. Also, a new computer-based program was implemented that ensures the effective utilization of drivers and vans by providing accurate/real time dates and the response time for a requested van. The programming allows the UP to become a paperless operation reducing operational costs to both the railroad and transport companies and enhances the ability of local managers to know where the drivers/vans are located, when they are available for crew transport, and provides improved service to the carrier and timely relief of crewmen.

The Crew working group implemented a crew monitoring process in February 2000. The process reduces the occurrence of unnecessary vehicular transport of crews. This has already had a positive impact on reducing the cross-deadheading delays.

The Crew working group endorsed a proposal to update the train movement database. This will provide better information on train running times between terminals for both revenue and freight trains. The goal is to improve train line-up accuracy. In January 1999 the accuracy level was at 62 percent and by March 2000 had reached a level of 73.4 percent

2. As a result of the SACP team workload study of the dispatcher positions at UP's Harriman Dispatch Center (HDC) in Omaha, workloads were realigned and additional positions were added to relieve excessive workloads. UP hired 114 new train dispatchers in 1998 and 124 new dispatchers will be hired in 1999. The goal is to have six dispatchers per station. Currently, the carrier has 5.3 dispatchers per station.
3. The Powder River Basin Dispatching Center was relocated from the HDC to a new joint UP/BNSF facility. The result has been better crew utilization and a significant improvement in the control of trains. Prior to the relocation, the average train speed was 12 mph; it is now 19 mph. Problems of congestion and derailment have also been addressed.
4. The SACP team participated in recommendations to decentralize coordinated dispatching centers in San Bernardino, California, Spring, Texas and Kansas City, Missouri. The

plan was implemented six months ahead of schedule. Problems of congestion and derailment have also been addressed.

### **Dispatcher Workload**

1. As a result of various studies made during the past year at the UP HDC, recommendations were made to re-evaluate the workloads of specific dispatcher positions and realign and create additional dispatcher positions that would relieve excessive workloads. Advancements during 1999 included the establishment of coordinated dispatching centers in San Bernardino, California, Kansas City, Missouri, and North Platte, Nebraska and the development of new positions in Chicago, Roseville and the Kansas City area.
2. Currently the HDC has established system standards for training, recertification, and efficiency testing for all dispatching offices and control operator locations.

### **Inspection and Testing Working Groups**

1. The SACP Maintenance of Way lodging subgroup implemented a formal Lodging Policy for UP Employees. The lodging group also developed a resolution process for handling lodging problems and complaints. This process includes a lodging survey to be used by an employee in the evaluation of an existing facility or a facility under consideration for lodging. In July 1999, the Lodging Group tested the Lodging Survey in more than 28 locations on the UP. This process is in the final pilot stages and was reviewed for adoption system-wide in February 2000. Final pilot locations included Houston, Livonia, Portland, Fresno, Los Angeles, Cheyenne, and Green River. All members of the committee have an equal voice in the selection of targeted lodging facilities.

Educational Material has been developed by the Lodging group. These include: Good Sleep Habit and Lodging Facility Environmental Factors, and Lodging Facility Evaluation Guidelines and Evaluation booklets.

A new Maintenance of Way Coordinator position was created within the HDC in September of 1999. The position will track slow orders put into place by track personnel. This position will help speed crew release/relief, and will monitor track permits that have been issued.

### **CSX Corporation Transportation, Inc. (CSXT)**

1. The Fatigue Countermeasure SACP team educated and trained employees on train scheduling practices, emergency response requirements and alertness strategies. The results are significant. Eighty-four percent of the engineers and 46 percent of the crew now have assigned days off. System-wide, 85 percent of all extra boards have assigned rest days.

2. The Crew Release SACP team improved train crew relief within 12 hours on the Fitzgerald subdivision. This initiative has resulted in a reduction in crew fatigue and safety accidents associated with fatigue. Graphs and data are now provided to managers who have been able to use the information to improve crew releases from duty.
3. Starting on March 1, 2000, after being off duty and coming back on duty, train and engine service employees will be able to mark up at noon. CSXT is looking at the possibility of having napping rooms in terminals for line of road crews.

#### National Railroad Passenger Corporation (Amtrak)

1. The SACP team is evaluating locomotive engineer fatigue issues, specifically one-person engineer-in-the-cab operations between midnight and 6:00 a.m. with no supplemental safety features, e.g., automatic train control and cab signals. Options being considered are modified assignments, off-duty napping, education and training, and identification of problem sleepers. While evaluation is underway, Amtrak has agreed to placing a second qualified engineer on the 34 identified assignments with a three-hour or greater incursion into the midnight to 6:00 a.m. time period, when a second engineer is available.

The joint Amtrak/BLE/FRA Alertness Evaluation Task Force met on October 26 and agreed that a more objective analysis process is needed. Amtrak Intercity and Circadian Technologies Incorporated (CTI) are exploring a joint venture to develop a pilot program to evaluate engineer alertness and workload. The pilot program would incorporate a joint Amtrak/BLE/FRA steering committee. The Amtrak Assistant Vice President for Safety recently expressed a commitment to an Amtrak system-wide, examination of fatigue beyond the employees covered by traditional HOS regulations.

CTI, under contract with Amtrak Intercity, is conducting a locomotive engineer alertness management pilot project on the Jacksonville-Lakeland, FL operation. Six locomotive engineers are wearing Physical Activity Monitors for a three-week period (the target is 12 locomotive engineers). The CTI effort includes education, training, engineer sleep disorder identification, and engineer assignment optimization. The joint Amtrak labor/management/FRA/CTI fatigue steering committee previewed an educational video on April 18. Of significant note, Amtrak management committed to expanding the Amtrak Intercity initiative by adopting fatigue mitigation as a system-wide effort to include the Amtrak West in addition to Amtrak Intercity.

2. The SACP team is evaluating the recruitment, training, and retention of Amtrak train dispatchers on the NEC. With the closure of many block stations, Amtrak is losing its traditional source from which to recruit future train dispatchers. Labor and management have expressed concern with the supply and quality of recruits. With the advent of increased train density and high speed rail, this issue has safety implications. The SACP team report evaluating this issue will be issued shortly.

### Kansas City Southern (KCS)

1. FRA was concerned about the cumulative effect of fatigue on the safety of KCS train and engine employees. In March 1999, KCS was signatory to a landmark agreement between the BLE, UTU and Class I carriers which seeks to solve chronic worker fatigue problems. As a result, complaints from railroad employees denied lay off and vacation privileges have dropped from a high average of 20 per week to less than two per month.
2. Following a series of focused audits in November of 1999, FRA requested and received action plans which addressed several concerns for staffing levels. Following one action plan target, the carrier has increased its locomotive maintenance staff by 16 percent. In addition to newly hired employees, other veteran employees were offered opportunities to move to the primary locomotive maintenance facility in Shreveport, Louisiana, consolidating inspection and maintenance at one strategically located supply point.
3. As a result of an FRA recommendation, a large "hub-style" operating territory for engineers at Shreveport has now been divided into smaller and therefore much safer segments. In the past, young and relatively inexperienced engineers without regular assignments were expected to know and safely operate over an extremely large and diverse operating territory. Following a fatal accident in November, FRA expressed concern that demands on the skill and memory exceeded the capabilities of a new engineer involved in the incident.
4. As a result of another FRA recommendation, additional Managers of Operating Practices have been appointed with reduced territories and fewer engine service employees to manage.

### Illinois Central Railroad (IC)

#### **Improvements in Manpower, Staffing and Crew Utilization**

1. The IC hired three additional dispatchers and three dispatcher trainees to staff their Homewood, Illinois, Dispatching Center. The railroad also purchased the G. E. Harris Computer Assisted Dispatching system. The G. E. Harris system replaced the Digit Con system that was in place at the beginning of the SACP. It was believed that the new system would be more readily integrated into the crew calling system thus reducing or eliminating many complaints associated with inaccurate train lineup. Unfortunately, the new system did not perform as well as expected and a decision has to be made shortly on whether or not the system can meet the current demands of the railroad.



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**

Office of the Administrator

400 Seventh St., S.W.  
Washington, D.C. 20590

**MAY 17 2000**

The Honorable Albert Gore, Jr.  
President of the Senate  
Washington, D.C. 20510

Dear Mr. President:

Section 214 of the Federal Railroad Safety Authorization Act of 1994 (Title II, Pub. L. No. 103-440) requires the Secretary of Transportation to submit a report to the Congress "on the development, deployment, and demonstration of positive train control systems." This "progress report" supplements the report "Railroad Communications and Train Control," which was provided to the Congress on July 8, 1994, pursuant to Section 11 of the Rail Safety Enforcement and Review Act (Pub. L. No. 102-365).

On behalf of the Secretary, the Federal Railroad Administration (**FRA**) is pleased to submit this report on the status of efforts to implement Positive Train Control (**PTC**) systems. "**PTC**" refers to the safety attributes of train control systems that utilize new technology to achieve improved safety. **PTC** systems will address the following "core functions":

- Preventing train-to-train collisions (positive train separation);
- Enforcing speed restrictions, including civil engineering restrictions (curves, bridges, etc.) and temporary slow orders; and
- Providing protection for roadway workers and their equipment operating under **specific** authorities.

Some **PTC** concepts also have the potential to provide warning of roadway work equipment operating outside the limits of authority and to receive and act upon available hazard **information** (e.g., high winds, high water, equipment defects) in a more timely or secure manner. In the future, **PTC** systems could generate data that could be transferred to highway users to **enhance** safety at highway-rail crossings as a part of Intelligent Transportation Systems.

PTC will require significant resources to develop and deploy on a large scale. Presently, deployment on the entire national rail system cannot be justified on safety grounds alone. However, passenger railroads will require PTC systems to operate safely at high speeds, optimize line capacity, and achieve acceptable trip times. We will continue to encourage railroads to deploy PTC voluntarily. FRA expects that freight railroads will integrate PTC technology into their business plans as demands for service quality increase and as capacity constraints require more precise management of train movements. While expenditures for deployment of PTC will fall largely on railroads requiring these systems for business and safety purposes, the Department of Transportation and other federal agencies can hasten the advent of this technology by--

- Providing a reliable radio navigation platform through completion of the National Differential GPS network;
- Ensuring adequate allocation of radio frequency spectrum;
- Putting in place performance-based regulations that facilitate introduction of new technology; and
- In concert with major railroads, completing investments in technology development that can prove the viability of new, interoperable PTC systems suitable for deployment at varying levels of **functionality** on the general freight railroad system (through the **North American Joint PTC** project).

Deployment of PTC systems has begun. Working with the State of Michigan and FRA, Amtrak has begun the first of two **90-day** implementation periods after which train speeds will be increased above the current 79 miles per hour on its corridor in Michigan. Within the next few months, the National Railroad Passenger Corporation (Amtrak) and New Jersey Transit Rail Operations will begin utilizing compatible technology to achieve PTC functions using transponders placed in the gage of the track and **onboard** computers, in coordination with existing and planned cab signal and automatic train control systems. These systems will support improved safety. Amtrak's system will also facilitate high-speed service on the Northeast Corridor particularly in the territory from New Haven, Connecticut, to Boston, Massachusetts, where electrification is being completed.

PTC systems elsewhere may utilize different technical approaches, due to the absence of cab signals and automatic train control on most freight lines and the need to minimize the cost of equipment along the right of way. For example, the Department is establishing the Nationwide Differential GPS to enable satellite-based location determination systems for PTC. Beginning in January of 1998, FRA, the state of Illinois, and the Association of American Railroads joined together to support a North American Positive Train Control Project. This project is **developing** a highly capable PTC system designed to address the needs of passenger and freight railroads.

The North American project also includes the objective of describing standards for “interoperability” of train control systems so that locomotives owned by one railroad will respond to control by the **PTC** system in place on a host railroad. This is particularly important as a practical matter, since various forms of joint operations are increasingly widespread on the national rail system.

Even as the North American project proceeds, individual railroads continue to explore other systems that could address **PTC** core functions. These efforts may provide insights regarding means of addressing safety and other needs that could significantly influence the development and deployment of **PTC** systems.

Recognizing the technical and institutional complexity of this issue, in September of 1997, **FRA** tasked the Railroad Safety Advisory Committee (**RSAC**) with investigating the potential of **PTC** and providing guidance regarding the steps that should be taken to encourage its deployment. The **RSAC** established a **PTC** Working Group, consisting of representatives of passenger and freight railroads, labor organizations, signal and train control suppliers, and states. The Working Group completed a progress report on implementation of **PTC** in August of 1999, and on September 8, 1999, the **RSAC** unanimously adopted the report, a copy of which is enclosed.

The **RSAC**’s **PTC** report constitutes the single most authoritative and complete account of efforts to improve safety through enhanced train control. It contains a wealth of information on current **PTC** projects, a detailed description of collisions and other accidents preventable by **PTC**, and an economic analysis that explores costs and benefits of **PTC** as applied to the major railroads. The report also sets forth findings, conclusions and recommendations for public and private sector action that point the way for implementation of **PTC**. I encourage careful consideration of the information and views contained in this document, which reflects the consensus views of the **RSAC** parties.

Copies of this letter and the enclosed report have been provided to the Speaker of the House of Representatives and the Chairmen, Senate Committee on Commerce, Science, and Transportation and the House Committee on Transportation and **Infrastructure**.

Sincerely,

A handwritten signature in black ink, reading "Jolene M. Molitoris". The signature is fluid and cursive, with the first name "Jolene" being more prominent and the last name "Molitoris" following in a similar style.

**Jolene M. Molitoris**  
Administrator

Enclosure



## AMENDMENTS TO PFC APPROVALS

Amendment No. City, State	Amendment approved date	Original approved net PFC revenue	Amended approved net PFC revenue	Original estimated charge exp. date	Amended estimated charge exp. date
92-01-C-03-GJT, Grand Junction, CO .....	03/17/00	\$1,812,000	\$1,794,117	03/01/04	04/01/03
96-02-U-02-GJT, Grand Junction, CO .....	03/17/00	NA	NA	03/01/04	04/01/03
97-03-C-01-GJT, Grand Junction, CO .....	03/17/00	\$2,157,000	\$1,932,000	03/01/04	04/01/03
92-01-C-07-SJC, San Jose, CA .....	03/30/00	NA	NA	09/01/03	09/01/03
96-01-I-02-BTV, Burlington, VT .....	04/14/00	\$12,476,233	\$22,966,283	03/01/06	12/01/10
96-02-C-01-BTV, Burlington, VT .....	04/14/00	\$40,000	\$40,000	03/01/06	12/01/10
98-04-C-01-CLM, Port Angeles, WA .....	04/17/00	\$118,572	\$122,650	11/01/01	11/01/00
98-02-C-02-IAD, London, VA .....	04/25/00	\$34,919,777	\$52,324,581	05/01/10	04/01/11
98-03-C-01-DCA, Arlington, VA .....	04/25/00	\$23,563,086	\$46,823,287	02/01/02	04/01/03

Issued in Washington, DC on May 4, 2000.

Eric Gabler,

Manager, Passenger Facility Charge Branch.

[FR Doc. 00-12144 Filed 5-12-00; 8:45 am]

BILLING CODE 4910-13-M

## DEPARTMENT OF TRANSPORTATION

### Federal Railroad Administration

[Docket No. FRA 2000-7325]

#### Remote Control Locomotives; Establishing Guidelines

**AGENCY:** Federal Railroad Administration (FRA), Department of Transportation (DOT).

**ACTION:** Notice of technical conference.

**SUMMARY:** FRA is initiating a technical conference to examine the use of remote control locomotive operations in the railroad industry. FRA plans to hold a technical conference on July 19, 2000, to discuss the current status of remote operation and possible development of guidelines for remote operations with all interested parties. FRA is exploring the use of guidelines to provide consistent, safe, industry-wide remote control locomotive use.

**DATES:** 1. A technical conference will be held on July 19, 2000, beginning at 10 am.

2. The deadline to register for participation in the technical conference is close of business on July 12, 2000. Please see Public Participation Procedures in SUPPLEMENTARY INFORMATION section of this document for registration details.

**ADDRESSES:** 1. Technical conference: FRA Headquarters, 7th floor, conference rooms 1 and 2, 1120 Vermont Ave. NW, Washington DC.

2. FRA Docket Clerk: Federal Railroad Administration Docket Clerk, Office of Chief Counsel, Mail Stop 10, 1120 Vermont Ave. NW, Washington DC, 20590. E-mail address for the FRA

Docket Clerk is renee.bridgers@fra.dot.gov.

**FOR FURTHER INFORMATION CONTACT:** S. Joseph Gallant, Operating Practices Specialist, FRA Office of Safety, Mail Stop 25, 1120 Vermont Ave. NW, Washington DC, 20590 (telephone: 202-493-6324), or Alan H. Nagler, Trial Attorney, FRA Office of Chief Counsel, Mail Stop 10, 1120 Vermont Ave. NW, Washington DC, 20590 (telephone: 202-493-6055).

#### SUPPLEMENTARY INFORMATION:

##### Background

Locomotives operated by use of remote control devices have been in use for a number of years. The term "remotely controlled locomotives" or "remote control locomotives" refers to a locomotive which, through use of a radio transmitter and receiver system, can be operated by a person while not physically within the confines of the locomotive cab. (As used in this notice, the term "remote control locomotive" (RCL) does not refer to use of distributive power, in which a locomotive or group of locomotives entrained or at the rear of a train is controlled by an engineer located in another locomotive within the same consist.) Although RCL operations are common place in steel mills, plant railroads and Canadian railroad systems, RCL operations have not been widely used by American railroads that are part of the general system of transportation.

Arguably, the RCL technology is still relatively new. In 1994, FRA proposed a nation-wide test of rail operations involving remotely controlled locomotives. 59 FR 59826 (Nov. 18, 1994). FRA published proposed interim guidelines for what was intended to be a two-year test period. 59 FR 59826, 59828-29 (Nov. 18, 1994). FRA stated that guidelines were necessary

**to assure that continued use of this new technology does not create a safety risk to**

**railroad employees or the public. FRA also does not want to hinder the development of new technologies which may be of benefit to the rail industry. \* \* \* All railroads using such remote-control systems will be permitted to continue using such systems only if they participate in the long-term test, so that FRA can evaluate remote control operations in light of the regulatory and statutory obligations imposed upon all railroads.**

59 FR at 59827 (Nov. 18, 1994). On February 23, 1995, FRA held a public hearing to gather testimony on remote control operating procedures. Several manufacturers, labor organizations, railroads and their associations participated in the hearing. The testimony provided by these organizations revealed a broad spectrum of opinion concerning the merits of the program, the substance of the program requirements, the risks associated with railroad employees and the safety of the technology. While information and opinions gathered at this meeting were helpful, FRA never took final agency action to implement guidelines and the test program never occurred. Instead, FRA has continued to review RCL operations on a case-by-case basis.

Recently, FRA has become aware of renewed interest in RCL operations. This interest has led to an increased number of questions concerning FRA's position with respect to those operations and particular types of RCL devices. Additionally, RCL technology and operating procedures continue to evolve. FRA believes that it would be prudent to re-examine the safety issues surrounding RCL operations at this time and consider whether to issue guidelines.

#### Technical Conference

The purpose of this technical conference is to determine the extent of RCL operations, the various purposes for which RCL technology is used, and the safety of these operations. FRA will examine all the pertinent safety aspects of RCL operations, including: (1) design

standards, e.g., weight, size and ergonomic considerations; (2) employee training, e.g., hands-on training considerations; (3) operating practices and procedures, including but not limited to standard operating procedures, safety rule modifications, and railroad operating plans; (4) test and inspection procedures, including but not limited to electric and magnetic field emissions; (5) security and reporting issues, including but not limited to recordkeeping and notification to FRA concerning all RCL accidents and incidents. FRA requests that interested parties share their views regarding the use of consistent and safe RCL operations. FRA encourages comments on all aspects of RCL use. A transcript of the technical conference will be taken and placed in the public docket of this proceeding.

#### Public Participation Procedures

Any person wishing to participate in the technical conference should notify the FRA Docket Clerk by mail or by e-mail by close of business on July 12, 2000. The notification of intent to participate should identify the organization, the person represents (if any), the names of all participants from that organization planning to participate, and a phone number at which the registrant can be reached. FRA reserves the right to limit active conference participation to those persons who have registered in advance.

(Authority: 49 U.S.C. 103, 20103-04, 20106-08, 20135 and 20701-03)

Issued in Washington, DC on May 9, 2000.

George Gavalla,

Associate Administrator for Safety.

[FR Doc. 00-12110 Filed 5-12-00; 8:45 am]

BILLING CODE 4910-06-P

## DEPARTMENT OF TRANSPORTATION

### Federal Railroad Administration

[Docket No. RSAC-96-1, Notice No. 20]

#### Railroad Safety Advisory Committee ("RSAC"); Working Group Activity Update

**AGENCY:** Federal Railroad Administration (FRA), Department of Transportation (DOT).

**ACTION:** Announcement of Railroad Safety Advisory Committee (RSAC) Working Group Activities.

**SUMMARY:** FRA is updating its announcement of RSAC's working group activities to reflect the current status of working group activities.

#### FOR FURTHER INFORMATION CONTACT:

Trish Paoletta, RSAC Coordinator, FRA, 1120 Vermont Ave, N.W., Mailstop 25, Washington, D.C. 20590, (202) 493-6212 or Grady Cothen, Deputy Associate Administrator for Safety Standards Program Development, FRA, 1120 Vermont Ave, N.W., Mailstop 25, Washington, D.C. 20590, (202) 493-6302.

**SUPPLEMENTARY INFORMATION:** This notice serves to update FRA's last announcement of working group activities and status reports on December 17, 1999 (64 FR 70756). The thirteenth full Committee meeting was held January 28, 2000. The next meeting of the full Committee is scheduled for May 19, 2000 at the Madison Hotel in Washington, D.C.

Since its first meeting in April of 1996, the RSAC has accepted sixteen tasks. Status for each of the tasks is provided below:

**Task 96-1—Revising the Freight Power Brake Regulations.** This Task was formally withdrawn from the RSAC on June 24, 1997. FRA published an NPRM on September 9, 1998, reflective of what FRA had learned through the collaborative process. Two public hearings were conducted and a technical conference was held. The date for submission of written comments was extended to March 1, 1999. FRA is preparing a final rule. Contact: Thomas Hermann (202) 493-6036.

**Task 96-2—Reviewing and recommending revisions to the Track Safety Standards (49 CFR Part 213).** This task was accepted April 2, 1996, and a Working Group was established. Consensus was reached on recommended revisions and an NPRM incorporating these recommendations was published in the **Federal Register** on July 3, 1997, (62 FR 36138). The final rule was published in the **Federal Register** on June 22, 1998 (63 FR 33991). The effective date of the rule was September 21, 1998. A task force was established to address Gage Restraint Measurement System (GRMS) technology applicability to the Track Safety Standards. A GRMS amendment to the Track Safety Standards is being prepared for presentation to the RSAC. Contact: Al MacDowell (202) 493-6236.

**Task 96-3—Reviewing and recommending revisions to the Radio Standards and Procedures (49 CFR Part 220).** This Task was accepted on April 2, 1996, and a Working Group was established. Consensus was reached on recommended revisions and an NPRM incorporating these recommendations was published in the **Federal Register** on June 26, 1997 (62 FR 34544). The

final rule was published on September 4, 1998 (63 FR 47182), and was effective on January 2, 1999. Contact: Gene Cox (202) 493-6319.

**Task 96-4—Reviewing the appropriateness of the agency's current policy regarding the applicability of existing and proposed regulations of tourist, excursion, scenic, and historic railroads.** This Task was accepted on April 2, 1996, and a Working Group was established. The Working Group monitored the steam locomotive regulations task. Contact: Grady Cothen (202) 493-6302.

**Task 96-5—Reviewing and recommending revisions to Steam Locomotive Inspection Standards (49 CFR Part 230).** This Task was assigned to the Tourist and Historic Working Group on July 24, 1996. Consensus was reached and an NPRM was published on September 25, 1998 (63 FR 51404). A public hearing was held on February 4, 1999, and recommendations were developed in response to comments received. The final rule was published on November 17, 1999 (64 FR 62838). Contact: George Scerbo (202) 493-6349.

**Task 96-6—Reviewing and recommending revisions to miscellaneous aspects of the regulations addressing Locomotive Engineer Certification (49 CFR Part 240).** This Task was accepted on October 31, 1996, and a Working Group was established. Consensus was reached and an NPRM was published on September 22, 1998. The Working Group met to resolve issues presented in public comments. The RSAC recommended issuance of a final rule with the Working Group modifications. The final rule was published November 8, 1999 (64 FR 60966). Contact: John Conklin (202) 493-6318.

**Task 96-7—Developing On-Track Equipment Safety Standards.** This task was assigned to the existing Track Standards Working Group on October 31, 1996, and a Task Force was established. The Task Force is finalizing a proposed rule to present to the RSAC for consideration. Contact: Al MacDowell (202) 493-6236.

**Task 96-8—This Planning Task:** evaluated the need for action responsive to recommendations contained in a report to Congress entitled, *Locomotive Crashworthiness & Working Conditions*. This Planning Task was accepted on October 31, 1996. A Planning Group was formed and reviewed the report, grouping issues into categories.

**Task 97-1—Developing crashworthiness specifications to promote the integrity of the locomotive cab in accidents resulting from collisions.** This Task was accepted on

# May 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
ASLRRA / Biloxi	1 Train Horn Hrng -Berea, Ohio	2	3	4 PTC D&I mtg Conf Rm #1 Washington, DC	5	6
7	8	9	10 HSGTA / Phila.	11 HSGTA	12 HSGTA	13
ASLRRA / Branson						
14	15	16	17	18	19 RSAC Full Committee Mtg-Madison Hotel	20
21	22 BRS National Negotiations	23 BRS National Negotiations	24 BRS National Negotiations	25 BRS National Negotiations	26 BRS National Negotiations	27
ASLRRA / Dearborn						
28	29	30	31			

Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

# June 2000

				1	2	3
4	5	6	7	8	9	10
ASLRRRA / Albuquerque						
11	12	13	14	15	16	17
18	19 Region 1 Regional Conference Newport, RI	20 Region 1 Regional Conference Newport, RI	21 Region 1 Regional Conference Newport, RI	22 Acc/Inc Rpt Working Group Conference Rm #1  Region 1 Regional Conference	23 Region 1 Regional Conference Newport, RI	24 Region 1 Regional Conference Newport, RI
25	26	27	28 PTC Standards Task Force Washington, DC	29 PTC Working Group Washington, DC	30	

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
July 2000						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19 Remote Control Locomotives Tech Review Conference	20	21	22
23 AAR Association Superintendents Norfolk, VA	24 AAR Association Superintendents Norfolk, VA RA Conference, AZ	25 AAR Association Superintendents Norfolk, VA RA Conference, AZ	26 RA Conference, AZ	27 RA Conference, AZ	28 RA Conference, AZ	29
30	31					

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
August 2000						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14 Region 8 Regional Conf Cavanaugh's Ridpath Hotel Spokane, WA	15 Region 8 Regional Conf Cavanaugh's Ridpath Hotel Spokane, WA	16 Region 8 Regional Conf Cavanaugh's Ridpath Hotel Spokane, WA	17 Region 8 Regional Conf Cavanaugh's Ridpath Hotel Spokane, WA	18 Region 8 Regional Conf Cavanaugh's Ridpath Hotel Spokane, WA	19
20	21	22	23	24	25	26
27	28 Region 7 Regional Conference San Diego, CA	29 Region 7 Regional Conference San Diego, CA	30 Region 7 Regional Conference San Diego, CA	31 Region 7 Regional Conference San Diego, CA		

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<h1>September 2000</h1>						
					1	2
3	4	5	6	7	8	9
<b>10</b> AREMA/REMSA/ RSSI Dallas	<b>11</b> AREMA/REMSA/ RSSI Dallas	<b>12</b> AREMA/REMSA/ RSSI Dallas	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>17</b> Mech Association Chicago	<b>18</b> Mech Association Chicago Partnership Council	<b>19</b> Mech Association Chicago Partnership Council	<b>20</b> Mech Association Chicago Partnership Council	<b>21</b> Partnership Council	<b>22</b> Partnership Council	<b>23</b>
<b>24</b> APTA Annual Meeting San Francisco, CA	<b>25</b> APTA Annual Meeting San Francisco, CA	<b>26</b> APTA Annual Meeting San Francisco, CA	<b>27</b> APTA Annual Meeting San Francisco, CA	<b>28</b> APTA Annual Meeting San Francisco, CA	<b>29</b>	<b>30</b>

# October 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 ASLRRR Annual Chicago	2 ASLRRR Annual Chicago	3 ASLRRR Annual Chicago	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
November 2000						
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27 RA Conference Santa Fe, NM	28 RA Conference Santa Fe, NM	29 RA Conference Santa Fe, NM	30 RA Conference Santa Fe, NM	RA Conference Santa Fe, NM	

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
December 2000					1 RA Conference Santa Fe, NM	2
3	4	5	6	7	8	9
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31						

development process. A series of public meetings will be held in the City of Conway. In addition, a public hearing will be held. The draft EIS will be available for public and agency review and comment prior to the public hearing.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation of Federal programs and activities apply to this program.)

Issued on: May 3, 2000.

Gary A. DalPorto,

Planning and Research Engineer, FHWA,  
Little Rock, Arkansas.

[FR Doc. 00-11861 Filed 5-10-00; 8:45 am]

BILLING CODE 4910-22-M

## DEPARTMENT OF TRANSPORTATION

### Federal-Highway Administration

#### Environmental Impact Statement: Tucker County, West Virginia

AGENCY: Federal Highway  
Administration (FHWA), DOT

ACTION: Notice of Intent.

**SUMMARY:** The FHWA is issuing this notice to advise the public that a Supplemental Environmental Impact Statement (SEIS) will be prepared for the Blackwater Avoidance area of the Thomas-to-Davis portion of the Parsons-to-Davis project of the proposed Appalachian Corridor H highway in Tucker County, West Virginia.

**FOR FURTHER INFORMATION CONTACT:** Henry E. Compton, Division Environmental Coordinator, Federal Highway Administration, West Virginia Division, Geary Plaza, Suite 200, 700 Washington Street East, Charleston, West Virginia, 25301, Telephone: (304) 347-5268.

**SUPPLEMENTARY INFORMATION:** In accordance with a court approved settlement agreement, the FHWA in cooperation with the West Virginia Department of Transportation (WVDOT) will prepare an SEIS to examine one or more potential alignment shifts for the Thomas-to-Davis section of Parsons-to-Davis project of the proposed Appalachian Corridor H highway in

Tucker County, West Virginia. A Record of Decision (ROD) for the entire Appalachian Corridor H highway (FHWA-WV-EIS-92-01-F) from Aggregates to the WV/VA state line, a distance of approximately 100 miles, was approved on August 2, 1996. The proposed Parsons-to-Davis project will provide a divided four-lane, partial control of access highway on new location for a distance of approximately 9 miles. The purpose of this project is to provide safe and efficient travel between population centers in Tucker County (Parsons Area and Thomas/Davis Area), while also contributing to the completion of Corridor H in West Virginia.

Alternates under consideration in the SEIS will be: (1) The no-action alternative, (2) the preferred alternative that was approved in the 1996 ROD, and (3) one or more alternatives that avoid the Blackwater Area identified in Exhibit 4 of the court approved Corridor H Settlement Agreement. Based on preliminary studies, it is expected that the avoidance alternatives considered in the SEIS will include one or more alignments that would shift the project to the north, resulting in additional connections to US 219, WV Route 32, and WV Route 93 in the vicinity of the towns of Thomas and Davis. However, final decisions on the scope of the SEIS will be made only after an opportunity for comment by interested agencies and the public during the scoping process, which will occur in May 2000.

Letters describing the proposed action and soliciting comments will be sent to appropriate federal, state, and local agencies, and to private organizations and citizens who have expressed or are known to have an interest in this proposal.

To ensure the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Issued on: May 2, 2000.

Henry E. Compton,

Environmental Coordinator, Charleston, West Virginia.

[FR Doc. 00-11860 Filed 5-10-00; 8:45 am]

BILLING CODE 4910-22-M

## DEPARTMENT OF TRANSPORTATION

### Federal Railroad Administration

[Docket Number FRA-1999-6364]

#### Northeast Illinois Railroad Corporation; Cancellation of Public Hearing

On April 4, 2000, the Federal Railroad Administration (FRA) published a notice in the **Federal Register** (65 FR 17704) announcing that a public hearing will be held based upon the Northeast Illinois Railroad Corporation's (Metra) request seeking a permanent waiver of compliance with the Passenger Equipment Safety Standards, 49 CFR part 238.303, which requires exterior or calendar day inspection, and 238.313, which requires a class one brake test be performed by a qualified maintenance person. Metra has withdrawn its request; therefore, the hearing scheduled for Tuesday, May 16, 2000, in Chicago, Illinois, has been canceled.

FRA regrets any inconvenience occasioned by the cancellation of his hearing.

Issued in Washington, DC on May 8, 2000.

Grady C. Cothen, Jr.,

Deputy Associate Administrator for Safety  
Standards and Program Development.

[FR Doc. 00-11865 Filed 5-10-00; 8:43 am]

BILLING CODE 4910-06-P

## DEPARTMENT OF TRANSPORTATION

### Federal Railroad Administration

#### Notice of Safety Advisory 2000-1

AGENCY: Federal Railroad  
Administration (FRA), Department of  
Transportation (DOT).

ACTION: Notice of Safety Advisory

**SUMMARY:** FRA is issuing Safety Advisory 2000-1 addressing safety concerns involving Model B1 relays, manufactured by General Railway Signal (GRS), between the years 1960 and 1985, and their potential to stick and remain in the energized position. ALSTOM Signaling, Inc., which has acquired GRS, estimates that approximately 2,000,000 relays are affected worldwide.

**FOR FURTHER INFORMATION CONTACT:** William E. Goodman, Staff Director, Signal and Train Control Division, Office of Safety Assurance and Compliance, FRA, 1120 Vermont Avenue, NW, RRS-13, Mail Stop 25, Washington, DC 20590 (telephone: 202-493-6325) or Mark Tessler, Trial Attorney, Office of Chief Counsel, 1120 Vermont Avenue, NW, RCC-12, Mail

Stop 10, Washington, DC 20590 (telephone 202-493-6061).

**SUPPLEMENTARY INFORMATION:** In a Safety Notice issued on August 18, 1995, GRS stated that it had received reports of ten incidents of a residual screw in the armature of a Type B1 relay not releasing from the lower core head surface within the specified time. GRS stated that this condition could develop in any application using one or more B1 relays. FRA is concerned about potential malfunctions in such relays which are critical to signal systems and their impact on safety if they do not operate within specified parameters.

In its Safety Notice, GRS concluded that:

1. The condition arises from the transfer of material from the cadmium-tin plated core head to the copper-silicon residual screw, which can cause the residual screw to adhere to the core head.

2. Any B1 relay manufactured by GRS between January 1960 and December 1985 incorporating residual screw Part No. 20360-012-00 (Catalog No. P62-255) could develop this condition.

3. The condition is more likely to occur in B1 Relays normally in the energized position used in one or more of the following circumstances:

a. High temperature, *i.e.* ambient temperatures above 100 degrees Fahrenheit (38 degrees Celsius) on a regular basis; and/or

b. Number of operations of the B1 Relay is less than four (4) times per day.

In order to avoid this condition, GRS recommended that all B1 Relays manufactured between January 1960 and December 1985 incorporating screw Part No. 20360-012-00 should be modified by replacing the residual screw in accordance with instructions provided by GRS.

FRA has determined that the safety of railroad employees and the general public compels the issuance of this Safety Advisory. Occurrences of GRS B1 Type relay failures have caused FRA serious concern about the safety of certain relays. The relays of concern were first identified by General Railway Signal, now ALSTOM Signaling, in a Safety Notice issued August 18, 1995. Any B1 relay manufactured by GRS between January 1960 and December 1985 incorporating residual screw Part No. 20360-012-00 (Catalog No. P62-255) could develop the condition of concern. The condition arises from the transfer of material from the cadmium-tin plated core head to the copper-silicon residual screw, which can cause the residual screw to adhere to the core head, not allowing the armature to

release from the lower core head surface within the specified time. The GRS recommended corrective action was to clean the relays, replace the residual screw, and in some cases replace the relay cores and bracket.

In July of 1999, after B1 relay failures were reported on the signal system of Washington Metropolitan Area Transit Authority, the FRA notified the Association of American Railroads, the American Public Transit Association, and the American Short Line and Regional Railroad Association, making those associations aware of the potential safety issue and asking that they bring the matter to the attention of their members.

#### Recommended Action

Subsequent to the July 1999 industry notification, additional reports of B1 relay failures have been reported to FRA. Due to these reports FRA is issuing this Safety Advisory, to again make all users of B1 relays aware of the potential problem and its recognized solution. While FRA is not at this time requiring immediate inspection and repair or replacement of all such relays, FRA strongly recommends that railroads accelerate B1 relay inspection and testing programs so that all B1 relays have been inspected (and repaired or replaced, if necessary) as soon as possible. FRA further recommends that all inspection and testing forces be made aware of this problem and especially of the likelihood that the condition is more likely to occur in B1 relays normally in the energized position and used in high temperature on a regular basis, or in which the number of operations of the relay is less than four times per day. (See GRS Safety Notice.).

FRA notes that present railroad safety regulations at title 49 of the Code of Federal Regulations require periodic testing of each relay affecting the safety of train operations (49 CFR 236.106) and each relay affecting the proper functioning of grade crossing warning systems (49 CFR 234.263). FRA further notes that 49 CFR 236.11 and 234.207 require that when any essential component of a signal system or highway rail crossing warning system fails to perform its intended signaling function or is not in correspondence with known operating conditions, the cause shall be determined and the faulty component adjusted, repaired, or replaced without undue delay. Therefore, if the B1 relay fails to perform as intended, pursuant to §§ 236.11 and 234.207, it must be replaced.

Copies of the Safety Notice issued by GRS, will be made available through the Regional Signal & Train Control Specialist or through the Signal & Train Control Division at FRA Headquarters, at 202-493-6325.

Issued in Washington, DC on May 5, 2000.

**George Gavalla,**

*Associate Administrator for Safety.*

[FR Doc. 00-11866 Filed 5-10-00; 8 45 am]

BILLING CODE 4910-06-P

## DEPARTMENT OF THE TREASURY

### Submission for OMB Review; Comment Request

May 4, 2000.

The Department of Treasury has submitted the following public information collection requirement(s) to OMB for review and clearance under the Paperwork Reduction Act of 1995, Public Law 104-13. Copies of the submission(s) may be obtained by calling the Treasury Bureau Clearance Officer listed. Comments regarding this information collection should be addressed to the OMB reviewer listed and to the Treasury Department Clearance Officer, Department of the Treasury, Room 2110, 1425 New York Avenue, NW., Washington, DC 20220.

**DATES:** Written comments should be received on or before June 12, 2000 to be assured of consideration.

#### Internal Revenue Service (IRS)

**OMB Number:** 1545-0805.

**Form Number:** IRS Form 5472.

**Type of Review:** Extension.

**Title:** Information Return of a 25% Foreign-Owned U.S. Corporation or a Foreign Corporation or a Foreign Corporation Engaged in a U.S. Trade or Business.

**Description:** Form 5472 is used to report information transactions between a U.S. corporation that is 25% foreign owned or a foreign corporation that is engaged in a U.S. trade or business and related foreign parties. The IRS uses Form 5472 to determine if inventory or other costs deducted by the U.S. or foreign corporation are correct.

**Respondents:** Business or other for-profit.

**Estimated Number of Respondents/Recordkeepers:** 75,000.

**Estimated Burden Hours Per Respondent/Recordkeeper:**

Recordkeeping—17 hr., 42 min.  
Learning about the law or the form—3 hr., 5 min.

Preparing and sending the form to the IRS—3 hr., 30 min.

**Frequency of Response:** Annually.



U.S. Department  
of Transportation

Federal Railroad  
Administration

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## **REPORT TO COMMITTEES OF THE CONGRESS**

### **BRIDGE DISPLACEMENT DETECTION SYSTEMS**

## Executive Summary

The overall risk of damage to rail bridges is small in relation to other risks in railroad operations and is **diffused** over a large number of bridges. The Federal Railroad Administration (**FRA**) has documented bridge ownership over navigable waterways, so that immediate notification can be made to the owners in the case of impacts by vessels. Where risk is known to be significantly above average due to heavy river **traffic**, the U.S. Coast Guard is working with bridge owners to implement protective countermeasures. Movable bridges are attended by railroad personnel, who are equipped to notify trains through use of signal systems, radios, or both, should the bridge be compromised.

Thousands of additional railroad bridges remain subject to a very small, but real risk of damage due to forces such as fires, flash floods, impacts associated with roadway underpasses, and similar hazards. Where costs were not excessive, railroads have responded to site-specific needs by installing hazard detection systems. However, extensive use of such systems is limited by their inherent costs, including the repeated disruptions associated with false warnings. Because the cost of providing power and interface with signal and communications systems constitutes the largest part of the cost associated with these systems, and because several detectors may be required on a single bridge to address the particular safety concern(s), future reductions in the cost of electronic systems are not likely to entirely eliminate the barriers to more extensive use of these systems.

However, innovative uses of technology, integrated into more capable train control systems, can result in selective enhancements to hazard detection on railroad bridges. **FRA** will seek opportunities to encourage implementation of these enhancements.

## Introduction

Section 207 of the Federal Railroad Safety Authorization Act of 1994 requires that: "... the Secretary of Transportation shall transmit to the Committee on Commerce, Science and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives' a report concerning any action that has been taken by the Secretary on railroad bridge displacement detection systems" (49 U.S.C. § 20145). This is the requested report. It covers the period 1994 to the present.

The lead role in producing this report to Congress was assigned to the Federal Railroad Administration (FRA). FRA immediately arranged for a survey of railroad bridge safety and an assessment of possible methods to detect damage to railroad bridges following impact by non-railroad vehicles, automotive, marine or airborne. Entitled "Overview of Railroad Bridges and Assessment of Methods to Monitor Railroad Bridge Integrity," this technical study was completed in 1994. The technical report, which has previously been published and provided to committee staff, is attached for ready reference. The findings of this investigation are presented in summary form here, and subsequent developments are described.

## Displacement and Other Threats to Bridge Safety

The problem of bridge displacement was injected into the public debate largely as a result of the derailment of Amtrak's train, the Sunset Limited, near Mobile, Alabama on September 22, 1993. The derailment was caused by the lateral displacement of the track structure on a CSX Transportation bridge over Big Bayou Canot. One span of the bridge had been knocked out of proper alignment by the impact of a barge tow operating in heavy fog in an area not normally employed for commercial navigation. The derailment resulted in 47 fatalities, including 5 crewmembers and 42 passengers, most from drowning. It was the worst train accident in Amtrak's history.

Some bridges are also vulnerable to damage from motor vehicles. The most notable recent accident from this cause occurred in Sheperdsville, Kentucky on November 19, 1991, when a truck hauling solid waste struck a small beam span bridge over a local road, displacing the bridge and its track and consequently derailing a freight train. The derailed train continued onto a large through-truss bridge over the Salt River and knocked down two of the three spans of that bridge. Several cars of hazardous materials went into the river and the area was evacuated for several days during restoration operations.

Natural forces can also threaten bridge integrity. For instance, Amtrak's Southwest Chief derailed on the Burlington Northern Santa Fe Railway near Kingman, Arizona on August 9, 1997 after passing over a damaged timber-framed bent bridge (one of approximately 250 such bridges.

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<sup>1</sup>The Committee on Transportation and Infrastructure subsequently succeeded to jurisdiction over railroad safety matters.

A flash flood resulting from a large summer storm had washed away the ground under the bridge's supporting structure. Ten Amtrak employees and 173 passengers were injured.

These events, although extraordinary in relation to normal operational hazards experienced on America's railroads, called attention to the problem of damage to bridges caused by factors outside of the railroads' control. In order to obtain adequate perspective and evaluate the benefits that might be realized from use of a variety of damage detection technologies, FRA elected to review a variety of hazards and countermeasures related to externally-caused damage, including fire, flood, ice, and earthquakes, as well as other damage incurred due to impacts by other transportation vehicles. Concerns include general weakening of bridge structure and damage to, or undermining of, structural supports, in addition to lateral displacement.

Clearly, detecting damage once it is done is not the ideal approach to prevention of catastrophic events, particularly since such events could never be wholly excluded by detection technology. The Department of Transportation also promotes safe marine and highway operations, reducing the likelihood that impacts with bridges will occur. FRA's Track Safety Standards also require special inspections following serious storms and other natural events that might threaten the track structure (49 CFR §213.239).

By virtue of their design and placement on navigable waters, movable railroad bridges are perhaps most vulnerable to damage. These bridges are generally monitored by a bridge attendant who is equipped to communicate with trains by VHF radio. These bridges have generally been protected to the extent possible by fenders, and other measures. This report does not address the issue of special track work required for proper functioning of movable bridges.<sup>2</sup> FRA has addressed this issue through a separate inspection program for these bridges and through new inspection requirements contained in recent revisions to the Track Safety Standards (63 FR 33992, 34012, 34041; June 22, 1998).

## Results of the Technical Study

The bridge integrity technical study was completed and a final report issued in June 1994. The report covers several areas including evaluation of the risks or hazards faced by railroad bridges and the technologies available to monitor bridge condition and alignment. It discusses operational issues related to bridge integrity monitors, and predicts costs to install monitors on three hypothetical bridges typical of those found on most railroads.

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<sup>2</sup>A derailment of an Amtrak passenger train at the far end of a movable bridge over the Hackensack River near Secausus, New Jersey, on November 23, 1996, was caused by a break in a specially-configured rail ("miter rail") at the junction of the movable span and the fixed span. A switch circuit controller designed to detect the position of the miter rail failed to function as intended due the break in the miter rail itself. The bridge structure itself was unimpaired.



The report notes that the **FRA** bridge survey revealed a population of approximately 100,900 railroad bridges of all types with an average length of 120 feet. The actual number of railroad accidents attributed to bridge misalignment or failure was found to be very small, on the order of two per year, or 1/1 000th of the total railroad accidents. This low failure rate was attributed to the periodic inspection programs **used** by the railroads and to the conservative design standards and construction practices commonly used for railroad bridges.

In the study, a generic railroad bridge accident model was developed including an initiating cause, the effects of the initiating cause on the bridge, the failure progression, and the final failure mode of the bridge. Initiating causes included those **from natural** and operational reasons. These causes were examined for associated physical conditions that might lend themselves to detection. These conditions include acoustic emission, light emission, temperature change, vibration, impact, movement, stress, change of shape, lack of continuity, and intrusion of objects.

A total of eighteen different technologies were compared for their advantages, disadvantages, cost, performance in detecting the effects, and likelihood of false alarms. The study concluded that track circuits used for control of railroad signal systems provide little probability of detecting bridge misalignments or damage short of collapse on bridges carrying continuous welded rail.

The key to obtaining real benefits from bridge integrity monitor systems is providing a warning to train crews. The most likely method of warning crews is through an interface to the wayside signal system, if the bridge is in signaled territory. This interface however, introduces additional requirements on the bridge monitor system so that the integrity of the wayside signal system is not degraded by the interface. If bridge monitors are interfaced with the wayside signal system, failures of the bridge monitor system will cause the signal system to display the most restrictive aspect. The necessity to stop trains and inspect both the bridge and the bridge **monitor** system before proceeding may cause large cost and operational impacts to the railroad if there are a large number of false alarms. Therefore, the bridge monitor system must be extremely reliable and able to discriminate between real hazards and false alarms to a very high degree.

The base cost to install bridge integrity monitors on one bridge was estimated to range between **\$24,000** and **\$40,000**. This cost includes the basic items needed at every installation, including a commercial or remote electric power supply, connections to the signal system, and housing for the basic apparatus. In addition, costs that vary with the length of the bridge, particularly the application of instrumentation to the bridge itself, were estimated at **approximately \$9.00** per foot of bridge length.

The life cycle costs over an estimated **25-year** useful life of the monitoring system were estimated at **\$40,000** to **\$54,000** base cost per bridge, plus approximately **\$18.00** per foot of bridge length. Applying these costs over the U.S. railroad bridge population provides an estimated life cycle cost to install and maintain these monitors ranging between **\$4.7 billion** and **\$5.8 billion**.

The report concludes that, even if all railroad bridges could be ranked by vulnerability and the top ten percent selected for installation of monitoring systems, the estimated life cycle cost of \$469-\$580 million for those bridges would be several times the projected accident cost of \$14.7 million over the same 25-year period.

Nevertheless, the bridge integrity technical report describes a range of new technologies that may offer some promise for improved detection systems in the future. To the extent these systems can be engineered to be reliable and inexpensive, they may warrant more extensive use, particularly if concerns regarding provision of power and communication of **alarms** are addressed.

Hazard detectors of all kinds, including bridge integrity systems, may be rendered somewhat more effective if tied into a Positive Train Control (**PTC**) system that is designed to provide priority to emergency messages and that provides a communication path for periodic health monitoring for the device (potentially holding down inspection and maintenance costs). However, the relative effectiveness of hazard detection in the context of **PTC** will be determined in part by “message latency” – the amount of delay that occurs as data is processed through data links to the computer on-board the locomotive. Further, deployment of **PTC** will not solve the inherent problem that hazard detection systems are costly. A recent report of the Railroad Safety Advisory Committee estimated **20-year** costs for a high-end **PTC** system, applied to the lines of the major railroads and enhanced with a significant array of hazard detection appliances, at \$7.8 billion. Safety benefits for the same period were estimated at approximately \$844 million, representing the prevention of a significant number of train collisions, derailments, and other accidents, including events for which prevention is questionable. (*Implementation of Positive Train Control* [September 8, 1999]). Like the results of the 1994 technical report, this finding emphasizes the need to employ a balanced approach to bridge integrity, including sound design, protection of piers and other exposed members, and use of all available means to report known damage promptly, as well as selective use of technology to detect and signal damage when it occurs.

## Other Approaches to Risk Mitigation

Detecting all bridge impacts that could threaten structural integrity would require instrumenting a large number of bridges, inspecting and maintaining a whole new class of infrastructure, and dealing with significant numbers of false alarms even with use of the best available technology. At the same time, detection of threats to bridge integrity could not result in completely effective prevention measures, since a train approaching a bridge at the time the damage occurred could not stop short in many cases, even with the most timely information. Further, detection of bridge damage quite obviously does not prevent it. With the best damage detection systems, there would still be significant economic cost from halting of rail operations (and perhaps marine or highway operations) while repairs are made to the structure. As a **result**, a large part of the effort historically devoted to this area of risk has focused on measures to prevent bridge impacts and to prevent bridge impacts **from** damaging bridge structures.

In September 1994, the National Transportation Safety Board (NTSB) sent four bridge-related recommendations to the Secretary of Transportation, two of which concerned this issue of vulnerability of railroad bridges to impacts or, put another way, the assignment of risk of impact to specific structures. In condensed form these were:

- To convene an inter-modal task force to develop a standard methodology for determining the vulnerability of the nation's highway and railroad bridges to collisions from marine vessels, to formulate a ranking system for identifying bridges at greatest risk and to provide guidance on the effectiveness and appropriateness of protective measures.
- Use the methodology developed by the intermodal task force to carry out a national risk assessment program for the nation's railroad . . . bridges.

In connection with the first recommendation, it should be noted that between 1982, when FRA started to accumulate relevant data, and 1998, there were six train accidents attributable to impact-misaligned railroad bridges: five were caused by motor vehicles and one by a marine vessel.

The intermodal task force was formed and adopted a risk assessment methodology responsive to the NTSB's recommendations. Each mode proceeded on its individual assignments and, in March 1995, then Secretary of Transportation **Federico Peña** provided a detailed report to the NTSB regarding the risk assessment methodology. The risk assessment methodology adopted is basically described in the National Research Council's report entitled ***Ship Collisions With Bridges*** and in publication of the American Association of State Highway and Transportation Officials entitled ***Guide Specification and Commentary for Vessel Collision Design of Highway Bridges*** (February 1991).

The risk assessment methodology resulting from the **intermodal** task force's work specifically applies to bridge projects at the planning and design stages, so that vulnerability to vessel collision can be reduced and minimized before the bridge project advances to the construction stage. This consideration is generally a bridge owner's responsibility that occurs prior to a Coast Guard bridge construction permit approval action is taken. At the time of Coast Guard review and coordination, the Coast Guard conducts **further** risk assessment through the bridge permit process. This process includes consideration of the potential impact that location and design will have on the safety of both land and marine **traffic**. Pier locations are evaluated with respect to the navigation channel through the bridge, adequacy of the proposed horizontal and vertical clearances to allow transit of existing and potential marine vessels, and the need for pier protection **fendering** and navigational lighting systems and other markings, clearances, and gauges.

Basic factors considered in the assessments for proposed and existing bridges include ~~the~~ vessel, the waterway, and vessel-waterway interaction as well as the bridge itself. Some of the specific factors considered are the size, speed, loading and type of vessel; waterway and

navigable channel geometry; water depths; environmental conditions; and bridge geometry and structural response.

Improvements have been made as a result of the assessments that have been conducted by the Coast Guard. For example, **after** the Amtrak accident in Mobile, Alabama, the Coast Guard completed a three-year national bridge survey of **10,000** existing highway and railroad bridges which were potentially vulnerable to damage by commercial vessel **traffic**. This vulnerability risk assessment focused upon the need for new or enhanced pier protection **fendering** and lighting systems. Out of the **121** bridges found to be potentially vulnerable, **83** have been upgraded with new or enhanced **fendering** and lighting systems to date. Owners of the remaining **38** structures are currently planning and budgeting projects to complete similar upgrades.

Railroad bridge owners currently have available the needed guidance for the performance of risk assessments, found in the recommended practices included in Chapter 8 of the *Manual for Railway Engineering* of the American Railway Engineering and Maintenance Association. This information has been used by the railroad industry for at least **10** years for developing and designing protection for railroad bridges over navigable waterways.

**FRA** has also compiled a list of railroad bridges over navigable waterways of the United States. This list includes the identification of the individual bridge, the owner and operator of the track on the bridge, and the location of the bridge in relation to waterway mileage, railroad mileage, and geographic coordinates. The list for each state is being made available to **emergency** response agencies in that state, and to the Coast Guard operational components that are concerned with marine safety and response to marine incidents.

On October **27, 1998**, Chairman Jim Hall of the **NTSB** wrote the Secretary classifying **the** Board's recommendations "Closed-Acceptable Alternative Action."

## Future Directions

Given the large number of railroad bridges, the conduct of over **600 million** train miles of transportation service each year, and the very small number of incidents that occur involving rail bridges, the risk that external factors will compromise the integrity of the average railroad **bridge** is very low. The bridges most at risk for damage generally require special attention to prevent damage, normally through clear marking of the bridges and the use of fenders, rip-rap, or other protective structures to prevent serious damage. Current efforts by the U.S. Coast Guard and **the** railroads to address high risk locations should be handled to completion, and **FRA** will work **with** the Coast Guard to periodically update bridge ownership information-both to facilitate preventive action and emergency notification.

Attention to railroad structures over highway bridges is also warranted. This issue is difficult, because most roadways under railroad bridges that involve low clearances are on **State**, county and local roads. In some cases, rail structures were built before current clearance

standards were established. In other cases, roadway authorities have reduced clearances by increasing pavement thickness. Determining which of the several thousand roadways that pass under railroad bridges currently present special risk is difficult, at best. Highway authorities can work to ensure that clearances are appropriate, checking for adequacy whenever road work is performed and verifying posted information. State and local authorities responsible for regulating motor vehicles should work to ensure that **vehicles** with tall loads are routed around vulnerable rail overpasses.

Only in very limited circumstances have railroads found it useful to install damage detection devices on, or proximate to, bridges. Examples include high-water detectors, fire detection systems, and a very small number of bridge alignment systems. To be effective, some of these systems must be installed on each span of a multiple-span bridge and may be subject to damage by birds, other small animals and vandals. Given the cost of providing power to operate detection devices, interfacing those devices with signal systems and other means of communication, conducting inspection and maintenance, and responding to false activations, making this option attractive in the future will be difficult. Nevertheless, **FRA** will seek opportunities to integrate demonstration of appropriate hazard detection technology into future rail projects involving Federal participation. In addition, as this report was prepared, ERA had participated in ongoing, open solicitations under the Transportation Research Board “IDEA” program (Innovations Deserving Exploratory Analysis) and **FRA’s** Next Generation High-Speed Rail Broad Agency Announcement. These solicitations actively seek and can fund new sensor technologies with potential applications related to railroad bridge integrity.